The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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COMPANY OF THE COLLIERIES AND HIGH FURNACES OF GARD, AND MINES OF LALLE BASSIN DE LA CEZE.

Social capital 8,000,000 frs. (£320,000), divided into 16,000 shares, of 500 frs. (£20) each.

The first instalment to be paid on subscribing—one-eighth, or £2 10s. per share; a second eighth (£2 10s.) after the definitive constitution of the company; the other instalments will be paid up by eighths every two months.—In case the company cannot be constituted, the eighths paid in will be returned integrally to the shareholders.

The company is provisionally formed en *commandite*, and will be transformed into a *Société Anonyme* as early as possible.

COMMITTEE OF MANAGEMENT, OR SURVEILLANCE.

MM. CORDIER, engineer, founder, and late director of the Administration of Forges of Strenli.

Lieut.-General Baron GALBOIS, grand officer of the Legion of Honour.

Viscount D'ABZAC, proprietor.

General Count FRIANT, aide-de-camp to the King, commander of the Legion of Honour.

Baron PINOTEAU, proprietor, member of the Legion of Honour. 1

L'ESCUYER, formerly director of Metallurgic Establishments.

The funds arising from the subscriptions will be paid in to Messrs. Delahante, Boyket, and Co., bankers, 7, Rue Chanchat, Paris; offices of the company at Paris, Cité Vindé, Boulevard de la Madeleine.—Eight thousand shares have already been subscribed for.

TO CAPITALISTS CONNECTED WITH THE IRON TRADE AND RAILWAYS.—TO BE DISPOSED OF, and may be entered on immediately, in good working order, with workmen properly appointed, all those new and substantially-erected works, called the

FORGES DE LA RISLE IN PONT-AUDEMER,

Capable of manufacturing 900 tons of iron per week. The present proprietors having other important engagements, is the sole cause of their being parted with. The most satisfactory information will be given to parties who may be really desirous of purchasing; and to those who may wish to realise good interest for their capital, with little or no risk, the present offers every inducement and advantage. The whole establishment has been erected within the last two years, regardless of expense; and it is undoubtedly equal, if not superior, to any thing of the kind in France, or any other country—not omitting England, which stands unrivalled in the world.

The works embrace three excellent water-wheels, of the aggregate power of 180 horses—these give motion and power to machinery for working a sheet and plate mill; a forge, with 20 puddling-furnaces; ball, scrap, and reheating furnaces; a steam hammer, or drawing-out forge; a mill for rolling axles, tyres, rails, and every kind of iron for railway purposes; and a bar, or merchant, mill for iron of almost every description.

The whole is covered over with most excellent and large slated roofs, supported by cast-iron columns and brick arches. Vessels of nearly 100 tons burthen come up to and discharge their cargoes of iron and coal into the depôts for that purpose, which are most conveniently arranged for the advantage of the works.

The offices, houses for managers, and workmen, and also for principals, are all that could be desired; in fact, the whole establishment should be seen to be duly appreciated. The proprietors will treat liberally with any person, or company, who may be willing to purchase the whole as it is now in operation; or they will dispose of the plant and machinery (which can be made applicable, at little cost, for rolling zinc, copper, and other metals) without the stock.

Further particulars may be obtained by applying to Mr. Johnson, at the works; or of Mr. Favrin, No. 144, Avenue des Champs Elysées, Paris; of Mr. Charles Davies, No. 8, Adam-street, Adelphi, London; Mr. Charles H. Capper, Birmingham.

SPLENDID PROPERTY.—TO BE SOLD, the beautiful DOMAIN of the CHANET, situated at half an hour's distance from the town of NEUFCHATEL (Switzerland), consisting of 20 hectares of close ground, about one-half in meadow, arable land, large gardens, orchards, and vineyards, and the other half in forest land. Two excellent RESIDENCES, with sufficiently spacious apartments for two families, and a detached HOUSE for the farmer. A large FARMHOUSE, having barns, stables, green-houses, and a bee-hive. This estate, by its situation, being a little above the Lake of Neufchatel, which it commands, and, at the same time, on the borders of the forests, offers one of the most delightful retreats, and the view which is enjoyed from the terrace, is most extensive, presenting, in the foreground, the town of Neufchatel, and the landscapes which present themselves on the banks of the lake; in the distance is the magnificent panorama of the chain of the Alps of Sentis (Appenzell) to Mont-Blanc, which is justly appreciated as one of the finest views of Switzerland. The disposers of the property refer parties for its description to the esteemed "Traveller's Guide in Switzerland," by Ebel. They will enter into an agreement for the sale of the domain between this and the 1st of June, with the purchaser who may offer them satisfactory terms. 3

Address, at Neufchatel, to M. le Professeur Prince; or to M. Calame, Conseiller et Secrétaire d'Etat.

GENERAL COMPANY FOR PURCHASING AND CLEARING THE WASTE LANDS OF FRANCE.

Under the auspices of the Minister of Commerce and Agriculture, and honoured by the concurrence of the Peers of France, Deputies, and the leading Agriculturists.

SOCIETE EN COMMANDITE,

Created under the joint-company of L. G. MAGNANT & CO., according to the agreement entered into before M. Fould, notary at Paris, the 19th December, 1846.

Social, or joint, capital 20,000,000 fr. (£800,000), divided into 200,000 shares, of 100 frs. each (£4); one-half of the capital (10,000,000 frs.) is only called for, as it is stated in the Tenth Article of the Act of the Company. 4

The shares will be payable (2*l.*) by fifths, from month to month, and will bear interest at 5 per cent. per annum, payable half-yearly. The capital is secured by the lands purchased for the profit of the company. The sums arising from the sale of shares will be deposited at the Bank of France, within three days after being paid in, and cannot be withdrawn, but for paying off the purchases, and the necessary expenses for the improvement of the acquired lands, and that only under the signature of the chairman and two members of the council of management. The company has entered into a negotiation for the concession of the Marais (fen) of Cotentin, the property of Louis Philippe. The company will be constituted by the subscription of 40,000 shares, that is 2,000,000 frs.

COMMITTEE OF INSPECTION, OR MANAGEMENT.

BUGEAUD (Marshall), Duc D'ysly, Count Guy de la Tour Dunin.

ELBEE (Marquis of), late Colonel-Chevalier of St. Louis and Malta, Officer of the Legion of Honour.

LEFEVRE (Elysée), Editor of the Agricultural Bulletin of *La Presse*.

REGNAULT DE LA SOUDIERE, late Receiver-General of Finances.

NOGUES (Viscount of), Chevalier of the Legion of Honour, Agricultural Proprietor.

ROSTAING (Marquis of), Chevalier of the Legion of Honour.

Count de la TOUR D'AUVERGNE.

TREMAULT (Baron of), Chevalier of St. Louis, Proprietor.

COMMITTEE OF AGRICULTURE.

LEFEVRE (Elysée), Editor of the Agricultural Bulletin of *La Presse*.

EDOUARD DUBAC, Agriculturist.

VERDIER, Agricultural Proprietor.

NOGUES (Viscount of), Chevalier of the Legion of Honour, Agricultural Proprietor.

DE FLEVILLE, Agriculturist.

REY DE MORANDE, author of the New Theory of Vegetation.

COMMITTEE OF ART AND WORKS.

DE MOLEON, formerly Pupil of the Polytechnic School, Civil Engineer, Chevalier of the Legion of Honour, &c. &c.

PARETO, Civil Engineer.

JUDICIARY COUNCIL.

BERRYER, Advocate, Member of the Chamber of Deputies.

ROYER-COLLARD, Dean of the Faculty of Law of Paris.

FOULD, Notary.

DELACOURTIE, Advocate at the Royal Court.

MOUILLEFARINE, Advocate of the First Instance.

DURMONT, attached to the Tribunal of Commerce of Paris, Chevalier of the Legion of Honour.

FIEVEE, Chevalier of the Legion of Honour, Government Engineer, charged with the composition of the *material* of the company.

BROKER OF THE COMPANY.—M. BOILEAU.

France required more than in one point the creation of a company such as that which has just been formed, under the direction of a man who has studied during 15 years all the great questions relating to this vast national undertaking. The moment has arrived to reassure the country on the fears which the continued high price of grain too much justifies. It is to this work—as great as it is requisite, as certain as it is profitable—that we invite the attention of all men of intelligence and capacity. Here every thing has been studied and seriously matured; the price of shares even, is a proof of what we set forth. Therefore, we were desirous that a company, founded above all in the interest of the masses, should doubly profit in masses; it was then that we agreed that our shares should be 100 frs. (4*l.*), only half of which sum is called for by fifths, from month to month—so that the labouring man, who every week takes the produce of his savings to the savings bank, might find in our company an interest more in connection with his wants, above all, in consequence of his small capital. We will say nothing of the security which our company offers; the names of the honourable men who form the committee of management, speak high and loud, and the undertaking itself will cause the social stock to quintuple in a short time. Lastly, the guarantees which we offer to all, repose on the purchased soil becoming the property of the shareholders. Very important concessions of lands are already offered to the company. The statutes of the company are distributed free, on a written application to the administration. The shares are subscribed for at the offices of the company, 51, Rue de la Madeleine; for the provinces and abroad, the applications must be sent free of postage, with a written engagement, and the first sum, by a post-office order, or an order at sight on Paris.

PATENT GALVANISED IRON AND WIRE ROPE WORKS,

MILLWALL, POPLAR.

ANDREW SMITH begs to inform the Mining, Railway, and Shipping interests, that he has obtained a PATENT for an IMPROVED METHOD of GALVANISING IRON, producing a much superior article at a considerable saving in cost—the improved process for galvanising wire rope, adding only £10 per ton instead of £20, under the ordinary processes. The rope is extensively used in damp situations, for mining and railway purposes, and for ships' standing rigging.—Mr. I. T. Tregellas, Truro, agent for Cornwall. 5

SULPHUR.—TO BE SOLD, RODGERS'S PATENT FOR THE SEPARATION OF SULPHUR FROM MINERAL SUBSTANCES.

Apply to Mr. PHILLIPS, 2, Duke-street, Adelphi, London. 6

LARGE PUMPING-ENGINE.—TO BE SOLD, BY PRIVATE CONTRACT, at GODOLPHIN MINES, Helston, Cornwall, one 80-inch pumping-engine, 10 feet stroke in the cylinder, and 8 feet in the shaft, with three tubular boilers of about 35 tons, a balance-bob and top-piece of rod to each. This excellent engine was erected by one of the first engineers in the county; the air-pumps are lined with brass, and the whole of the machinery possesses great strength and durability. It has done a "duty" equal to the first in Cornwall, and is well worth the attention of any gentleman or company requiring such a powerful machine. The engine will be sold with or without the boilers, balance-bobs, &c., as may best suit the purchasers.

Application to be made to Capt. R. Williams, on the mines.

Dated Godolphin Mines, Helston, Cornwall, February 25, 1846. 7

ON SALE, BY PRIVATE CONTRACT, at the PROVIDENCE MINES, near ST. IVES, an excellent 30-inch cylinder STEAM PUMPING-ENGINE, with boiler, about 7 tons.—For duty performed, see *Lean's Reporter*, 1844 and 1845.

50 Fathoms 9-inch PUMPS, 30 fathoms 8-inch ditto, and other sizes.

1 11-inch doorpiece, 1 8-inch ditto.

1 8-inch working barrel, 1 6½-inch ditto.

Rod-plates, fend-off bobs, rod-shieves, whim-shieves, shaft rollers, bucket-door, windbores, and a variety of other articles. 8

Apply to Capt. Penberthy, on the mines; or Samuel Higgs and Son, Penzance.

Dated March 10, 1847.

NORTH WALES MINING COMPANY.—

COUNTY OF MERIONETH.

Divided into 12,500 shares—limited to 10*l.* each, and carried out upon the Cost-book System, with a deposit of 2*l.* 10s. per share. 9

OFFICES—No. 3, NEW BROAD-STREET, LONDON.

The company will be carried on under the system known in Cornwall as the "Cost-book System," whereby the shareholders have the peculiar advantage of determining at any time their liability by a relinquishment of their shares; and by a clause in the Cost-book, no further call beyond the 2*l.* 10s. will be made until after a dividend is declared out of the profits of the undertaking.

The public is requested to seek information at the offices of the company, No. 2, New Broad-street, London, where specimens of the ores, and original assays by some of the principal assayers of the present day, as well as the manuscript reports of Captains Kitto, Matthew Francis, and Wm. Williams, may be inspected.

Applications for prospectuses, copies of the reports, and shares, to be made to the purser, at the company's offices; the solicitors, W. W. Fisher, Esq., 3, King-street, Cheapside, London, and Messrs. Owen and Griffiths, Dolgelly, Merioneth; and the following brokers and agents:—Mr. B. Rankin, 23, Tokenhouse-yard; Messrs. Watson and Cuell, 1, St. Michael's-alley, Cornhill; and Mr. C. W. De Bernardy, 46, Leicester-square, London; Messrs. Thomas Cardwell and Sons, and Mr. J. Ferneyhough, Manchester; Mr. P. Kempson, Birmingham; Mr. C. S. Edsall, Truro; Mr. James Cunningham, jun., Bristol; Capt. W. Williams, near Crowan, Cornwall; Messrs. C. Wellbeloved and Co., Leeds.—Copies of the Prospectus can also be had at the office of Mr. Henry English, mining engineer, 25, Fleet-street; and at the *Mining Journal* Office, 26, Fleet-street, London.

W. T. GRIFFITHS, Purser.

COOMBE VALLEY SLATE COMPANY.

Capital £5000, in 1000 shares, of £5 each.—Deposit £1 per share.

CONDUCTED ON THE COST-BOOK SYSTEM.

OFFICE, No. 5, WHITEFRIARS-STREET, CITY, LONDON. 10

Messrs. Williams, Deacon, and Co., bankers.

The public is respectfully informed, that, in pursuance of a resolution, passed at the meeting of shareholders, held at the office, on Thursday, the 8th inst., that the SHARES will be ALLOTTED on the ABOVE TERMS, during the present month only, by personal application being made at the office of the company; or of Mr. J. Lane, 75, Old Broad-street, City.

C. S. RICHARDSON, Secretary.

5, Whitefriars-street, Fleet-street, London, April 15, 1847.

CAMBRIAN ANTHRACITE IRON COMPANY.

(PROVISIONALLY REGISTERED.)

Capital £200,000, in 20,000 shares, of £10 each.—Deposit 1s. per share, pursuant to 7 and 8 Victoria, cap. 110. 11

On formation of the company, a call of £1 per share to be made—the remainder (if necessary) in instalments, not exceeding 10s. per share.

It is proposed to apply for an Act of Incorporation for various powers, and to limit the liability of the shareholders.

An agreement has been entered into for the leasing of considerable mines in the western portion of the South Wales Mineral Basin, together with the machinery, steam-engine, railroad, trams, canal barges, &c., at a very reasonable rate. The public are invited to inspect the maps and sections of the mines, and the estimates and calculations of working the same, at the offices of Mr. Towse, solicitor, 24, Laurence Pountney-lane, City, where applications for shares may be made, and further information obtained.

ANGLO-MEXICAN MINT OFFICE, 5, Broad-street-buildings, April 23, 1847.—Notice is hereby given, that the ANNUAL GENERAL MEETING of shareholders in this company will be HELD at the office, as above, on Tuesday, the 4th of May next, when one director will be elected, in the place of Edw. Harry, Esq., who goes out by rotation, but is eligible for re-election, and will be proposed accordingly.—The chair to be taken at One o'clock precisely. 12

G. B. LONSDALE, Secretary.

MEXICAN COMPANY.—The directors hereby give Notice, that the ANNUAL GENERAL MEETING of proprietors in this company will be HELD at the office of the company, on Thursday, the 6th of May next, at Two o'clock precisely, in conformity with the Deed of Constitution of the company. 13

32, Great Winchester-street, April 22, 1847. J. M. MAUDE, Secretary.

WHEAL CURTIS COPPER MINING COMPANY.—Notice is hereby given, that a GENERAL MEETING of the shareholders of this company will be HELD at the offices, as below, on Tuesday, the 4th day of May next, at One o'clock in the afternoon, when the Deed of Settlement will be submitted for signature, and a statement of the accounts and prospects of the mine laid before the meeting. By order, GEO. A. JACOB, Secretary. 14

Gresham Rooms, Basinghall-street, London, April 23, 1847.

WHEAL CONCORD MINE.—Notice is hereby given, that all PERSONS having any CLAIMS or DEMANDS on the adventurers of this MINE, are requested to FORWARD their respective ACCOUNTS to ME, on or before the 27th day of April inst. G. W. SNELL, Purser. 15

Callington, April 17, 1847.

WHEAL HOLWELL MINE, STOKE CLIMSLAND.—Notice is hereby given, that all PERSONS having any CLAIMS or DEMANDS on the adventurers of this MINE, are requested to FORWARD their respective ACCOUNTS to ME, on or before the 27th day of April inst. G. W. SNELL, Purser. 16

Callington, April 17, 1847.

WHEAL MARY MINE, CALSTOCK.—Notice is hereby given, that all PERSONS having any CLAIMS or DEMANDS on the adventurers of this MINE, are requested to FORWARD their respective ACCOUNTS to ME, on or before the 27th day of April inst. G. W. SNELL, Purser. 17

Callington, April 17, 1847.

TINCROFT MINING COMPANY.—Notice is hereby given, that the ANNUAL GENERAL MEETING of the shareholders will be HELD on Friday, the 30th of April, at 44, Finsbury-square, at Two o'clock precisely. 18

London, April 5, 1847.

TRELEIGH CONSOLIDATED MINING COMPANY.—Notice is hereby given, that a DIVIDEND of SIX SHILLINGS per share, being 5 per cent. upon the paid-up capital, has been declared by the directors, and that the same will be PAID at the office, on Monday the 3d of May next, and on every subsequent Monday, between the hours of Eleven and Three. The certificates will be required to be left two clear days, for the purpose of being marked.

57, Old Broad-street, April, 1847. WILLIAM NICHOLSON, Secretary. 19

OFFICE OF THE GOVERNOR AND COMPANY OF COPPER MINERS IN ENGLAND, Castle Baynard Wharf, 13, Upper Thames-street, London, April 20, 1847.—The Court of Assistants of the GOVERNOR AND COMPANY OF COPPER MINERS IN ENGLAND hereby give Notice, that a DIVIDEND, up to Lady-day last, on the Preference Shares capital of the company, will be PAYABLE on and after the 26th inst., at the rate of 7½ per cent. per annum. The scrip certificates, with lists of the numbers, must be left at the office, for registration, three clear days prior to payment.—Blank forms of lists may be had at the office.

By order of the Court of Assistants,

E. YOUNGER, Secretary pro tem. 20

OFFICE OF THE GOVERNOR AND COMPANY OF COPPER MINERS IN ENGLAND, Castle Baynard Wharf, 13, Upper Thames-street, London, April 20, 1847.—The Court of Assistants of the GOVERNOR AND COMPANY OF COPPER MINERS IN ENGLAND hereby give Notice, that a DIVIDEND, for the half-year ending at Lady-day last, at the rate of 5 per cent. per annum, on the paid-up capital stock of the company, was declared on the 7th inst., and will be PAYABLE at this office on and after Monday, the 26th inst., between the hours of Eleven and Three. By order of the Court of Assistants, 21

E. YOUNGER, Secretary pro tem.

TO COPPER SMELTERS.—WANTED, THREE REFINERS, and a NUMBER of FURNACEMEN and CALCINERS. As GOOD WAGES will be given, none need apply but such as are well qualified to take charge of a furnace. Some will be required to go abroad—such as are willing to do so, are requested to state so in their application.—Apply (by letter) to "X. Y.," at the *Mining Journal* Office, 26, Fleet-street, London. 22

WANTED—A BLAST-FURNACE MANAGER.—Previous and sufficient experience in considerable and successfully-conducted iron-works is indispensable: steadiness, sobriety, good character, and close attention to his duties, are equally required. Superior ability and qualifications will be considered worthy of liberal remuneration. No person deficient in these respects would be suited to the situation, the works being already on a considerable scale.—Applications (in writing), stating particulars of qualifications and experience, may be addressed to "A. B.," at Brown and Parnell's, stationers, 17, Old Broad-street, City.—An interview will be appointed with any party with whom it may seem likely that an arrangement may be made. 23

TO MINE ADVENTURERS.—A respectable YOUNG MAN, who has had considerable experience in Cornwall for the last nine years, as an ASSAYER OF COPPER, SILVER, LEAD, TIN, IRON, &c., and also a general knowledge of SMELTING and PRACTICAL MINING, OFFERS his SERVICES to any GENTLEMAN, or COMPANY, concerned in the above branches. He has been abroad, and is acquainted with the Spanish language, and has no objection to go again—especially to South Australia.—Letters (post-paid), addressed to Mr. James Lane, 75, Old Broad-street; or at the office of the *Mining Journal*, 26, Fleet-street, London, will receive every attention.

April 10, 1847. 24

THE SETT OF A SILVER-LEAD MINE, in CARDIGANSHIRE, of a very promising nature, to BE DISPOSED OF.—For further particulars apply to CROSSMAN, SOMMERS, & CO., 28, Threadneedle-street, London. 25

WHEAL CURTIS COPPER MINING COMPANY.—A FEW SHARES FOR SALE in the ABOVE COMPANY for 15s. per share—£1 10s. paid.—Apply (by letter) to "A. M.," Post-office, Paradise-row, Chelsea. 26

WILSON & FRASER, 2, WELLINGTON-BUILDINGS, LIVERPOOL, and 13, EXCHANGE-PLACE, GLASGOW, have always ON SALE PIG-IRON, BAR-IRON, RAILWAY CHAIRS, and RAILWAY BARS. 27

MESSRS. J. PAINTER AND CO., SHAREBROKERS, MINING AND GENERAL AGENTS, 25, *CASTLE-STREET, LIVERPOOL,* AFFORD EVERY INFORMATION as to the STATE of the MARKETS, PRICES, upon application. 28

MR. R. TREDINNICK, MINING AGENT AND DEALER IN EVERY DESCRIPTION OF SHARES. *THREE KING'S COURT, LOMBARD-STREET, LONDON.* 29

THOMAS P. THOMAS, MINE AGENT, AND DEALER IN RAILWAY AND OTHER SHARES. 18, *THREADNEEDLE-STREET, LONDON.* 30

MINING OFFICES, 1, *ST. MICHAEL'S-ALLEY, CORNHILL, LONDON.*

WATSON AND CUELL, MINE AGENTS.—N.B.—STATISTICAL INFORMATION furnished (on application) to SHAREHOLDERS in MINES in Cornwall, Devon, Scotland, Ireland, Wales, and Spain. 31

WILLIAM H. SMITH, MINING SHARE AGENT, 10, *WARNFORD-COURT, THROGMORTON-STREET,* has SHARES FOR SALE in the following MINES—viz.:

WHEAL LOUISA,	ALBERT CONSOLS,
WHEAL BLENCOWE,	WEST SHEPHERD,
WHEAL MARY PENTUAN,	VICTORIA TIN MINING COMPANY.

*** Every information will be afforded on application. 32

MESSRS. LINTHORNE, JONES, AND CO., STOCK, MINING, AND SHARE AGENTS,

*** Every information will be afforded as to the markets and prices of the above, by application (post paid) at their offices, 48, *THREADNEEDLE-STREET, LONDON.* 33

JONATHAN DAVEY, MINE AGENT, SURVEYOR, AND SHAREBROKER, *MATTHEW-STREET, TAVISTOCK.* 34

Mines surveyed, inspected, and reported on, at the shortest notice; plans, sections, and dialling performed, by day or contract.

JAMES LANE, MINING SHARE DEALER, 75, *OLD BROAD-STREET, LONDON.* 35

MESSRS. WINSTANLY AND CO., SHAREBROKERS, inform their friends and the public, they BUY and SELL every description of RAILWAY SHARES on the most advantageous terms; they also make advances upon the deposit of scrip and shares for periods as may be agreed. 36

6, Bank Chambers, City.

MINING ADVENTURERS' SUBSCRIPTION ROOM, 28, *THREADNEEDLE-STREET, LONDON.*

CROSSMAN, SOMMERS, AND CO., AGENTS,

SHARES FOR DISPOSAL. 37

Birch Tor Tin Mine	Grambler and St. Aubyn Copper Mine
Wheal Yeoland Copper Mine	Wheal Tremayne Copper Mine
Grose's Delabole and Wharncliffe Slate Quarry	Great Wheal Frederick Linkinghorne Wheal Collier
West Wheal Providence Copper Mine	&c. &c. &c.

SOUTH FRIENDSHIP WHEAL ANN.

A FEW FORFEITED SHARES in the ABOVE MINE FOR DISPOSAL.

WANTED TO PURCHASE—SHARES in Wheal Sisters and in Wheal Gonamena.

CROSSMAN, SOMMERS, & CO. beg gratefully to acknowledge the receipt of many letters from mining adventurers, commendatory of their system, and promising support; they also beg to acknowledge the receipt of applications from highly-deserving parties in Truro and Tavistock, for the appointment of agents under such system. Crossman, Sommers, and Co., do not wish to make their system exclusive, but will be quite ready to co-operate with these, or any other parties in the mining districts who will publicly announce their intention of conducting their business upon the principle introduced by Crossman, Sommers, and Co., and who will STRICTLY adhere to the system to which Crossman, Sommers, and Co., pledged themselves in their prospectus.

CORNISH MINES.—The evils attendant on the too frequent practice of brokers being also speculators and mine jobbers, are daily acknowledged by the adventurers in Cornish mines. Such brokers are in the habit of watching the market and purchasing on private speculation, as prices of shares rise or fall, and thus absorb the greater part of that profit which should come into the hands of the *bona fide* adventurer. It is admitted that it would be highly desirable to check this practice, with which view the advertiser presents himself to the notice of the mining public, and solicits their support as a COMMISSION AGENT, through whom sales and purchases of mining shares can be effected with the certainty of the full price in every instance being paid to the seller, subject only to a fixed commission of 5 per cent. on all sales not exceeding £30; of 3½ per cent. on all shares exceeding £30 and not exceeding £200; and 1½ per cent. on all sales above that amount.

The testimonials which, through the kindness of his friends and supporters, JOHN TREGONING can offer to the public, will afford a satisfactory assurance to his patrons that he will not, under any circumstance, become a speculator or mine jobber, nor directly or indirectly be possessed of a share in any mining adventure.

JOHN TREGONING

HAS OPENED A MINING OFFICE, AT THE HIGH CROSS, TRURO, 38

for the PURCHASE and SALE of MINE SHARES on COMMISSION; and lists, with prices for sales and purchases, will be open, except as to the proprietors' names, to the inspection of any adventurer or purchaser. In addition to the above-named testimonials, J. T. is permitted to refer parties, as to his character and integrity, to Messrs. Willyams, Hodge, and Co., Miners' Bank, Truro; Messrs. Baynard and Sons, merchants, Truro; or, Messrs. Passingham and Simmons, solicitors, Truro.

High Cross, Truro, April 15, 1847.

J. T. has SHARES ON SALE in the following, amongst other, promising MINES:—

Tresavean	Gwinear Consols
Treviskey and Barrier	Wheal Lemon
Wheal Comfort	Wheal Dyke
Wheal Andrew and Nangiles	Burthy Mine
Wheal Tremayne	Great Callestick Moors
Ross Consols	Wheal Trerew
West Wheal Providence	Tresavean Eastern Barrier
Wheal Maria (Tin)	Budnick Consols
Wheal Clifford	Wheal Acland
Callestock Mine	Lamberoose Wheal Maria
Wheal Williams	Wheal Walter
Perran Wheal Virgin	Lostwithiel Consols
Great Consols	Ecton Mines
Wheal Bucketts	Wheal Concord
Garras Mine	&c. &c. &c.

CARDINAL & CENTRAL GAS-LIGHT, VENTILATION, ANIMAL CHARCOAL, AND CARBONACEOUS MANURE COMPANY.

Registered Provisionally, as per 7 and 8 Victoria, cap. 110.

This company is promulgated in order to bring into use a series of processes (patented by William Radley, Ch. E., Esq., in 1845), for the production, purification, and application of Oil Gas, formed by the destructive distillation of bones and animal refuse, from which sources the entire metropolis can be lighted.

The company can afford to vend better gas than any ever made in London from coal or cannel, at less than half the lowest present selling price—their intention being to offer it, at first, at the rate of 3s. 6d. per 1000 cubic feet, and subsequently at 2s.

That this company has claims to be supported in its objects, may be gathered from the following facts—the accuracy of which can be, by the patentee, incontestibly established:—

1. The quantity of bones found weekly, within the two-penny post circuit of the metropolis, averages 842 tons, about one-half of which only is now available.

2. Every 3 tons will yield 2 tons of animal charcoal, worth £30; 3 cwts. of fat, worth £8; 3 cwts. of the basis of sal ammoniac, worth £7 10s.; 2 cwts. of cyanogen (the principle of Prussian blue), worth £10.—Total, £45 10s.

Cost of bones (reckoned at 25 per cent. above market price), £20.
Labour, fuel, &c., £8 13s.—leaves £16 15s. net profit.

3. As every ton of bones will likewise yield 6740 cubic feet of oil gas, we shall also have, in addition to the commercial products, upwards of 20,000 cubic feet of oil gas—not only free of cost, but 35 per cent. absolute profit given in.

4. The present manufacturers of animal charcoal do actually, accidentally, produce half of this quantity of gas from a ton of bones, but throw it away as worthless.

5. From this source, without the use of one ton of coal—*i. e.*, from the whole aggregate of 842 tons of bones, nearly 300,000,000 of cubic feet of rich oil gas may be, with certainty, annually obtained—worth, at its sterling value, £300,000—plus £100,000, the profit upon the subsidiary products of its generation.

6. Professor Faraday has lately applied to the new palace, at Westminster, some of the least valuable principles of ventilation conceived by Mr. Radley, years ago, and matured and patented in 1845—which all pronounce as praiseworthy.

7. Animal charcoal is more efficient, when produced at a low than a high temperature—that of commerce being 1800° Fahr., whilst that of Radley ranges no higher than 1200°.

8. The manufacture of porcelain earth, with what the French term *engrais*, and declare to be superior to guano, will open new and extensive markets for the subsidiary products of the company.

From these data it will be seen, that this patent not only forms a fit object for the employment of a large and combined capital, but is likewise entitled to the patronage of the noble, the wealthy, and scientific.

As a committee of promoters at present only exists as the nucleus of the future company, gentlemen of influence are invited to form the directory, and nominate the usual officers.—A prospectus, and other documents, may be obtained at the temporary offices of the promoters, No. 11, Poultry, where the engineer and patentee may be seen every Thursday, at Two to Four o'clock. By order of the committee,

Central Gas Office, 11, Poultry, City, April 15, 1847. GEO. DUNKLEY, Sec.

STEAM COAL—WITHOUT SMOKE, as per experiments made at her Majesty's Dockyard, Woolwich.

CAMERON'S COALBROOK STEAM COAL, AND SWANSEA AND LOUGHOR RAILWAY COMPANY.—(Completely Registered and Incorporated.)

OFFICES—2, MOORGATE-STREET, LONDON. 40

The directors are now prepared to supply steam ship companies, manufacturers, shippers, and others, with the company's steam coal, either at the company's wharf at Swansea, or in London. A statement, showing by comparative trial the superiority of this coal for steam purposes over every other, and a scale of prices, may be had on application at the company's offices here, or at their wharf at Swansea.—March 18, 1846.

NO BREWING UTENSILS REQUIRED.

PATENT CONCENTRATED MALT AND HOP EXTRACT

enables PRIVATE INDIVIDUALS to MAKE

FINE HOME-BREWED ALE,

WITHOUT EMPLOYING ANY BREWING UTENSILS.—It has only to be dissolved in hot-water and fermented.—Sold, in jars, for medicinal and other purposes, at 1s. and 1s. 6d.; and in bottles for brewing 9 to 18 gallons and upwards of ale, at 6s. 6d. and 12s. 6d. each, by the

BRITISH NATIONAL MALT EXTRACT COMPANY, 41

7, NICHOLAS-LANE, LOMBARD-STREET; Petty, Wood, and Co., 53, Threadneedle-street; Wix and Sons, 22, Leadenhall-street; Batty and Co., 15, Finsbury-pavement; De Castro and Peach, 65, Piccadilly; Hockin and Co., 38, Duke-street, Manchester-square; and oilmen and grocers generally.

Also, just published, and may be had gratis,

NATIONAL BREWING: A GUIDE to the USE of CONCENTRATED MALT AND HOP EXTRACT, for BREWING and WINE MAKING; to which is added, MEDICAL OPINIONS relative to the virtues of malt and hops.

ON NERVOUS DEBILITY & GENERATIVE DISEASES.

—Just published, the Thirtieth Thousand, an improved edition, revised and corrected, 120 pages, price 2s., in a sealed envelope, or forwarded, post-paid, to any address, secure from observation, for 2s. 6d., in postage stamps, illustrated with numerous anatomical coloured engravings, "MANHOOD: the Causes of its Premature Decline, with Plain Directions for its Perfect Restoration." A medical essay on those diseases of the generative organs, emanating from solitary and sedentary habits, indiscriminate excesses, the effects of climate, and infection, &c., addressed to the sufferer in Youth, Manhood, and Old Age; with practical remarks on marriage—the treatment and cure of nervous and mental debility, impotency, syphilis, and other urino-genital diseases, by which even the most shattered constitution may be restored, and reach the full period of life allotted to man. The whole illustrated with numerous anatomical engravings on steel, in colour, explaining the various functions, secretions, and structures of the reproductive organs in health and disease; with instructions for private correspondence, cases, &c.

By J. L. CURTIS and CO., Consulting Surgeons, 7, Frith-street, Soho-square, London.

REVIEWS OF THE WORK:—"'Manhood:' a medical work. To the gay and thoughtless we trust this little work will serve as a beacon to warn them of the danger attendant upon the too rash indulgence of their passions, whilst to some it may serve as a monitor in the hour of temptation, and to the afflicted as a sure guide to health."—*Chronicle*. "We feel no hesitation in saying, that there is no member of society by whom the book will not be found useful—whether such person hold the relation of a parent, a preceptor, or a clergyman."—*Sun, Evening Paper*. "Curtis on Manhood should be in the hands of youth and old age. It is a medical publication, ably written, and developes the treatment of a class of painful maladies which has too long been the prey of the illiterate and the designing."—*United Service Gazette*.

Published by the authors, and may be had at their residence; sold also by Strange, 21, Paternoster-row; Hannay, 63, Oxford-street; Mann, 39, Cornhill, London; A. Heywood, Oldham-street, Manchester; Philip, South Castle-street, Liverpool: Campbell, 146, Argyle-street, Glasgow; Robinson, 11, Greenside-street, Edinburgh; and, in a sealed envelope, by all booksellers.—Messrs. Curtis and Co. are to be consulted daily at their residence, No. 7, Frith-street, Soho-square, London; and patients can have this work privately forwarded them, by initial or otherwise, to any part of the United Kingdom, direct from the authors' residence; or from any of the above agents, on remitting 2s. 6d. in postage stamps.

ON THE SECRET INFIRMITIES OF YOUTH AND MATURITY,
With 25 coloured engravings.

Just published (in a sealed envelope), price 2s. 6d.; or post-paid to any address, 3s. 6d., in Post-office order or stamps,

SELF-PRESERVATION: A Medical Treatise, on Marriage, and

on those Secret Infirmities and Disorders of Youth and Maturity that are usually acquired at an early period of life, which tend to destroy physical and mental energy, ardour, passion, and all the attributes of manhood. Illustrated with twenty-five coloured engravings, on the anatomy, physiology, and diseases of the urinary and reproductive organs, explaining their various structures, uses, and functions, and showing the injuries that are produced in them, by solitary habits, excesses and infection. With practical observations on the treatment of nervous debility, local and constitutional weakness, syphilis, stricture, and other diseases of the urethra. By SAMUEL LAMERT, consulting surgeon, 9, Bedford-street, Bedford-square, London, Matriculated Member of the University of Edinburgh, Honorary Member of the London Hospital Medical Society, Licentiate of Apothecaries' Hall, London, &c. 43

REVIEWS OF THE WORK.

"The author of this singular and talented work is a legally qualified medical man, who has evidently had considerable experience in the treatment of the various disorders, arising from the follies and frailties of early indiscretion. The engravings are an invaluable addition, by demonstrating the consequences of excesses, which must act as a salutary warning to youth and maturity, and by its perusal, many questions may be satisfactorily replied to, that admit of no appeal, even to the most confidential friend."—*Era*.

"Unquestionably this is a most extraordinary and skilful work, and ought to be extensively circulated; for it is quite evident that there are peculiar habits acquired at public schools and private seminaries, which are totally unknown and concealed from the conductors of those establishments, and which cannot be too strongly reprobated and condemned. The engravings that accompany the work are clear and explanatory; and being written by a duly-qualified medical practitioner, will, doubtless, be the means of saving many a youth, as well as those of maturer age, from the various evil consequences resulting from early indiscretions."—*Magnet*.

Published by the author; and may be had from Kent and Richards, 51 and 52, Paternoster-row; Hannay and Co., 63, Oxford-street; Starie, 23, Tichborne-street, Quadrant; Gordon, 148, Leadenhall-street, London; Newton, 16, Church-street, Liverpool; and by all booksellers.—At home for consultation daily, from nine till two, and from five till eight; and all letters, immediately replied to, if containing the *fee* of £1, for advice, &c. The work may be had direct from the author's residence, and will be forwarded, free by post, to any address for 3s. 6d. in postage stamps.—9, Bedford street, Bedford-square.

The Nineteenth Edition, price 2s. 6d.; free by post, 3s. 6d.

THE SILENT FRIEND: a medical work, on the concealed

cause of constitutional or acquired debility, loss of muscular energy, and derangement of the generative system, nervous debility, constitutional weakness, excessive indulgence, &c.; with Observations on Marriage, &c. By R. and L. PERRY and Co., surgeons, London. Published by the authors, and sold at their residence; also by Strange, 21, Paternoster-row; Hannay & Co., 63, Oxford-street; Noble, 109, Chancery-lane; Gordon, 148, Leadenhall-street; Purkis, Compton-street, Soho, London.

Part I. of this work is addressed to those who are prevented from forming a matrimonial alliance, and will be found an available introduction to the means of perfect and secret restoration to manhood.—Part II. treats upon those forms of diseases, either in their primary or secondary state, arising from infection—showing how numbers neglect to obtain competent medical aid, entail upon themselves years of misery and suffering. 44

The CORDIAL BALM of SYRIACUM is a stimulant and renovator in all cases of constitutional or acquired debility; by its use the whole system becomes restored to a healthy state of organisation. Sold in bottles, price 11s. and 33s.

THE CONCENTRATED DETERSIVE ESSENCE.—An anti-syphilitic remedy for searching out and purifying the blood from venereal contamination, scurvy, blotches on the head, face, and body, ulcerations, and those painful affections arising from improper treatment, or the effects of mercury, or secondary symptoms. Price 11s. and 33s. per bottle; also £5 cases.

PERRY'S PURIFYING SPECIFIC PILLS are perfectly free from mercury, capaiva, and other deleterious drugs, and may be taken with safety without interference with or loss of time from business, and may be relied upon in every instance. Sold in boxes, at 2s. 9d., 4s. 6d., and 11s. each, by all medicine vendors—of whom may be had the *Silent Friend*.—Messrs. R. and L. Perry and Co. may be consulted at No. 19, Berners-street, Oxford-street, London, daily.

Transactions of Scientific Bodies.

MEETINGS DURING THE ENSUING WEEK.

Society.	Address.	Day.	Hour.
Royal Botanic	Inner Circle, Regent's-park	Saturday	3½ P.M.
Westminster Medical	37 A, Seckville-street	Saturday	8 P.M.
Geographical	3, Waterloo-place	Monday	8½ P.M.
British Architects	16, Grosvenor-street	Monday	8 P.M.
Medical	Bolt-court, Fleet-street	Monday	8 P.M.
Medical and Chirurgical	53, Berners-street	Tuesday	8½ P.M.
Civil Engineers	25, Great George-street	Tuesday	8 P.M.
Zoological	11, Hanover-square	Tuesday	8½ P.M.
Geological	Somerset-house	Wednesday	8½ P.M.
London Institution	Finsbury-circus	Thursday	12 P.M.
Royal	Somerset-house	Thursday	4 P.M.
Antiquaries	Somerset-house	Thursday	8 P.M.
Royal Society Literature	4, St. Martin's-place	Thursday	4 P.M.
Royal Institution	Albemarle-street	Friday	3 P.M.
Horticultural	21, Regent-street	Saturday	1 P.M.

INSTITUTION OF CIVIL ENGINEERS.

APRIL 20.—Sir J. RENNIE (President) in the chair.

The paper read was by Mr. Fairbairn, of Manchester, "On the Defects in the Principle and Construction of Fire-proof Buildings." It commenced by insisting strongly on the dangerous consequences of making use of cast-iron beams of large span, without intermediate supports, unless the dimensions of the beams were very large, and pointing out the treacherous nature of a chrystalline metallic body, such as cast-iron, when applied to support heavy weights in the construction of buildings. After some farther remarks on the importance of a thorough knowledge of the laws which govern the use and application of cast-iron as a material for building, under the various strains to which it may be subjected, the author proceeded to investigate the circumstances connected with the fall of Messrs. Gray's cotton mill at Manchester. This building was stated to be about 40 ft. long, and 31 ft. 8 in. wide, and to consist of two storeys in height, containing the boilers below and the machinery above, over which, instead of a roof, was a water cistern, covering the whole extent of the building. The first floor was composed of large iron beams, of 31 ft. 8 in. span, without intermediate support; on these beams brick arches were turned, sustaining the whole weight of the upper part of the building. The author then demonstrated, that these large beams were totally inadequate to support the weight of the superincumbent mass, especially as the whole pressure was upon the centre of the beams, which were of a form ill calculated to bear the pressure; added to which, the wrought-iron trussing was so badly applied, that the breaking strain was arrived at before the truss rods were brought into a state of tension. The consequence of this was, that one of the lower beams broke in the centre under a less weight than it had previously supported, both under preliminary trial, and when the cistern was fuller than at the time of the accident. The paper closed with some remarks on the delicate and invidious duty of reporting on such accidents, as those in which the reputation of gentlemen of high professional acquirements may be involved; and the author expressed his reluctance in condemning the construction of the building in question.

In the discussion which ensued, it was argued that, if proper proportions of material had been observed, the accident ought not to have occurred. It appeared evident that the wrought-iron truss rods had been so put on, that they allowed more than the breaking strain of the cast-iron to be arrived at, before they came into operation. The instances of the trussed-beam bridges, so extensively used by Mr. Stephenson, and other engineers, on railways, were quoted to show, that by a judicious employment of wrought-iron trusses upon cast-iron beams, large spans might be crossed with safety; and even, in some cases, where, from unseen defects in the metal, a beam had fractured, the brass rods had sufficed to support the structure, and enabled the traffic to be continued across the bridge until the repairs could be effected. In all cases a strength of not less than four to one should be employed, and for such uses as the iron beams of pumping engines, which were exposed to great vibration, and sudden shocks, from the sudden influx of steam below the piston, or the accidental breaking of a pump-rod, the proportions of seven or eight to one should be observed.

The paper announced to be read at the meeting of Tuesday, April 27, was, "On the Laws of Isochronism of the Balance-spring of Watches and Chronometers," by Mr. C. Frodsham, Assoc. Inst. C.E.

SOCIETY OF ARTS.

APRIL 14.—THOMAS WINKWORTH, Esq., in the chair.

The following gentlemen were elected members:—O. Hamilton, D. Henriques, F. E. H. Fowler, P. Fairbairn, H. Bright, G. Basevi, S. Smirke, E. Sharpe, & W. A. Wilkinson, Esqs.

The secretary read a communication from Mr. W. C. Fuller, on his "Vulcanised India-Rubber Buffers for Railway Carriages." The invention consists in substituting a series of rings of India-rubber, separated by iron plates, for the ordinary spiral spring. The buffer-rod passes through the centre of the rings, and is protected from being bound by the India-rubber when compressed, by means of a conical flange affixed to the iron plates. The advantages which this invention appears to possess over the ordinary springs are—great reduction in weight—less liability to get out of order—greater facility of increasing or decreasing the power of the spring—and its ready applicability to carriages already constructed, without increase of cost.—[A more detailed description appears in another column of our Journal].

Mr. RICARDO wished to know what would be the compression of the buffer under ordinary circumstances—supposing the length of the India-rubber employed to be 3 ft.?—Mr. FULLER stated, that the length of stroke required for the buffer is from 10 to 13 in.; that the ordinary strength of the present springs is from 3 to 3½ tons; that is, 3 tons reduces the circular spring to a flat, while the Indian-rubber is capable of resisting from 5 to 50 tons.

The next communication read was by Mr. Philip Palmer, "On the Application of Crown Glass Metal to the Manufacture of various Domestic and other Articles." The author commenced his paper by stating, that he did not intend, on the present occasion, to claim the attention of the society to works of art in glass, but to such as are of recent manufacture, and have arisen out of the repeal of the duty on that material. Before the repeal of the duty, crown glass was only used for glazing windows and for prints, while the various articles for the table were made from flint glass. After describing the difference of manufacture employed in the crown and flint glass, he proceeded to enumerate some of the articles which are now being made of crown glass, and which were never before made of glass; among them were the following:—A glass dairy pan, for setting of cream; the advantage of using glass, instead of zinc, tin, or lead, is its producing a larger quantity of cream—equal, it is stated, to from 30 to 50 per cent. The next articles enumerated were propagating glasses, for horticultural purposes; these supersede the use of metal frames, bee and grape glasses, cucumber tubes and seed protectors, panties for roofing, and, for domestic purposes, glass pipes, pickle jars, rolling-pins, pastry pans, jugs, &c.

The author having also shown the application of crown glass for coloured railway signal lamps, concluded by stating:—"That the success which has attended the exertions of the flint glass manufacturers, and enabled them to produce their brilliant specimens, will (he fears) make these humbler samples appear dull and uninteresting, until their cheapness and applicability show in what their advantage consists."

WESTERN SCIENTIFIC INSTITUTION.

On Thursday, the 15th inst., a lecture by Robert Hunt., Esq., "On the Chemical Agencies of Light," was delivered at the above institution; this subject in such hands is one of the most interesting in the whole range of science. Treating of the Newtonian theory in the first place, as to the division, colours, and arrangements of the sun's rays, he recited the results of the researches and experiments of our great philosopher, and the recent discoveries connected with this subject; the views of Herschel, Faraday, and others, together with his own investigations and beautiful experiments, explaining the action of light upon prepared photographic plates; the theory of the division of the sun's rays into three effects—viz.: light, heat, and actinism; and tracing to the chemical action of the latter all those beautiful effects connected with photography. We are sorry that our space will not permit our giving a detailed report of this highly-interesting lecture, but we hope to be enabled to lay before our readers shortly the results of some experiments at present in progress.

On Monday evening, the 19th inst., a paper "On the best Means of Protecting Timber, &c., from Destruction by Rot, Insects, &c." was read. The various patents for effecting these objects were explained and illustrated by diagrams, models, &c. Payne's patent process was described at length, and illustrated by chemical and other experiments, as also was his recent improvements in treating materials used in Marine constructions. An animated discussion afterwards took place, as to the cause and operation of dry-rot, &c., and upon the relative merits of the different processes. Several practical and scientific gentlemen, connected with railway and engineering works, gave the result of their experience of the different processes, and their opinion as to the best.

VALUABLE DISCOVERY.—An interesting discovery has been made on the line of the Ashburton and South Devon Railway, about a quarter of a mile from that town—that of a cement rock, specimens of which have been sent to London, and it is stated to be of a superior quality. The line of railway will pass through one of the finest marble rock quarries in the county. This will be one great advantage to the company, as stone and lime can be procured at a low rate, in any quantity.—*West Briton*.

GRANITE QUARRY IN THE ISLE OF MAN.—We rejoice to learn that the granite quarry of this island is turning out a good concern; it will be a permanent source of income to Mona. It is said, that even Aberdeen has sent us orders here for such blocks of granite for its harbour, as cannot be supplied by its own quarries. We have been presented with specimens of our insular granite; and have no hesitation in pronouncing them of the first quality; they are hard, well knit together, and will receive a high polish. We wish every success to the enterprising company employed in working the quarry.—*Mona's Herald*.

STEAM NAVIGATION.—The Commissioners of the Customs having had under their consideration a letter from Mr. Lefevre, assistant secretary to the Lords of the Committee of Privy Council for Trade, relative to the provisions of the Act of 9th and 10th Vict., chap. 100, for the regulation of steam navigation, and signifying, with reference to the 14th section of the Act, that the owners of all steam-vessels proceeding to sea with passengers, whether to ports beyond the seas or to ports on the British coast, are required to transmit to the Board of Trade, twice in every year—viz., on or before the 30th of April and the 31st of October, respectively—the following declarations:—1. Of the sufficiency and good condition of the hull of such steamer, under the hand of a shipwright surveyor, to be approved by the Lords of the said committee.—2. Of the sufficiency and good condition of the machinery of such steam-vessel, under the hand of an engineer, to be approved in like manner by the Lords of the said committee, such declaration to bear date of some day in the said months of April or October, respectively; and further, signifying, on the part of their lordships, that the owners are also required to obtain certificates, under the hand of one of their Lordships' secretaries, of the registry of such declarations. Orders have been issued by the board that the same be communicated to the proper officers of the revenue at this port, and the collectors and comptrollers at the several outports of the United Kingdom, with directions to take care that the provisions contained in the section of the Act above referred to be duly enforced.

A CURE OF A BAD LEG BY HOLLOWAY'S PILLS AND OINTMENT.—Extract of a letter, dated Northampton, April 2, 1847:—"To Professor Holloway. Sir,—The following case I feel bound to acquaint you with, that others may have the opportunity of making a trial of your pills and ointment in analogous cases. Catharine Owen, residing in Bridge-street, in this town, suffered from a bad leg, that was covered with sores—discharging immense quantities of humour; the agony occasioned was so great, as to prevent her from even getting a moment's repose; yet your pills and ointment cured her, though she had been under several eminent surgeons. (Signed) J. HUMPHERY, chemist, Northampton."—Sold by all druggists; and at Professor Holloway's establishment, 244, Strand, London. 45

THE STEAM-ENGINE.

We have received a pamphlet, entitled *Practical Observations on the Present State of the Steam-Engine*, by G. V. Gustafsson, which seems to be entitled to some notice, emanating, as it does, from one who has been actively employed in her Majesty's steam marine. The object of the writer appears to be, mainly to show that in the present day, even as in the days of Savery, the same feelings predominate in high quarters, to those who are unaided by wealth and influence, although our author does not, as his compeer in 1698, informed us, that whatever be the improvement, even if of the greatest utility, unless you can sit round the green table (meaning the Board of Admiralty, then held in Crutched Friars), your invention is neglected of course. The author of this pamphlet, after noticing many of the discrepancies of the knowledge in the present day, especially the unsatisfactory method of calculating horse-power, and the idle boasting of many would-be inventors, with regard to the saving to be effected by their various schemes, which would, if they are to be believed, eventually do away with that expensive article, *fuel*, states:—

My attention was first accidentally drawn to the defect in steam machinery from observing the crank and main-shaft of marine and locomotive engines frequently break. I was led from such observation to examine and compare the power of the engine with the strength of the materials employed. I found, by rules and tables of acknowledged authority, that the sectional area of the crank and main-shaft were more than sufficient to bear a strain equivalent to the nominal horse-power of the engine. Having now satisfied myself that the breakage did not arise from the want of strength in the material—except in some cases, where a flaw or defect in the iron was discovered—I proceeded to make my inquiry in another direction. From the established law of mechanics, added to practical observations, I knew that a falling body would gain velocity, and consequently power, in its descent; and, changing the falling body into a revolving one, we have the same result. Suppose an engine of 100 nominal horse-power, with a fly-wheel in proportion, to be set in motion, the first stroke of the engine would communicate to the fly-wheel an impetus equal to 100-horse power—the second would add another 100, provided the friction did not increase with the augmentation of the velocity, and that the inertia, or dead stop, were not a subject of still further deduction. Now, in consequence of this continually augmenting and absorbing power, the engine does not communicate the same impetus to the fly the second stroke as it did the first, nor the third as it did the second, and so on: this decrease goes on until the power of the engine is exactly balanced by the resistance, or the duty to be performed by the engine. The fly has now gained its maximum velocity; therefore, if we could accurately determine the power communicated to the fly each stroke of the engine, the sum total would, of course, be the amount of power concentrated in the fly, or, in other words, the power requisite to bring the fly to a dead stop, probably more than tenfold the original power. Still the power so concentrated could have no tendency to break the crank or other parts of the machinery, unless opposed to an equal or greater resistance, which, however, is not to be found in the friction or adherence of the carriage-wheels on the rails, nor in the resistance offered by the water to the paddle-wheels; where, then, are we to look for the cause of the breakage alluded to? The steam-engine of the present day consists of a ponderous, unwieldy machine, put in motion by the application of steam on its piston. Suppose, for the sake of argument, that a steam-engine of nominally 100-horse power, and whose weight—having a vertical or reciprocating movement—is 10 tons: this ponderous weight must, during each stroke, not only be twice set in motion, but also twice brought to a stop (an evil which in reciprocating engines cannot be avoided); and, travelling at a rapid rate, must and does, in course of time, injure those parts of the engine by which the alternate action is performed—such as the crank, journal of main-shaft, gudgeons in beam, oscillating engine, &c.; hence, the moveable parts of an engine can never be too light, when consistent with strength, as some persons seem to think when they substitute iron for wood floats in paddle-wheels; but they forget that, although it may give a more uniform motion to the engine, it is attended with great loss of power, besides destruction to the machinery.

I have said that my attention was first drawn to the subject of improvement in the steam-engine, from having observed the breakage of those parts to which I have just alluded. It occurred to me, that by giving to the piston a continuous and uninterrupted motion, all those defects would be avoided; and, after considering the best and most practical way of effecting this, I set about constructing a model of a rotary engine (not knowing that the same subject had been tried in many instances, and failed). I found, to my great surprise, on my arrival in England, in 1840, that a strong prejudice existed, even amongst scientific men, against rotary engines. I mentioned to a gentleman of high reputation in the scientific world, that I had an improvement in the steam-engine I wished to introduce; his answer was—"My time, talent, and money, are all occupied." Discouraged by such repulsion, I resolved to let the subject drop for the present. I did not even mention in what my improvement consisted, nor that I had a working model to illustrate it with. I have since scarcely mentioned the subject to an individual; it has, nevertheless, occupied my attention, and particularly the last three or four years, having had ample opportunity during that time to ascertain that the steam-engine is far from having passed improvement.

Our author states, that his attention was first attracted to the term horse-power, or rather the difference between *mechanical* and *animal* horse-power, by the facility with which boats are moved on canals and rivers, and instances a case on the Grand Junction Canal about 10 years back, stating, that one of the fly-boats was temporarily fitted with an engine and boiler, of not less than 10 or 15-horse power, and the boat only requiring a speed very little exceeding *five miles per hour*; whilst a boat heavily laden was drawn at nearly the same speed by *one* animal horse-power—thus suggesting, according to his statement, a disparity of *mechanical* and *animal* power equal to 10 or 15 to 1 in favour of the latter. Perhaps, this difference might be traced to other sources—such as malformation of the engine, or the application of a defective propelling apparatus to the vessel; and we think the author ought, he being an engineer, to have gone more fully into the experiment he witnessed, and have ascertained the cause of so small a velocity being obtained with so much power. We know there are great difficulties to surmount, in introducing steam navigation in the confined and shallow waters of canals—but we have witnessed as great a speed as the foregoing, and obtained on the same canal, with a diminution of at least two-thirds of the horse-power named by Mr. Gustafsson. We also cannot agree with him with regard to the *one-horse animal power*, drawing a heavily-laden barge at nearly the same rate, even had our author's *animal power* been exerting its *maximum*—it being a well-known fact, that the heavily-laden barges on canals seldom exceed a velocity of 2·5 miles per hour; and, if an average was taken, we feel confident that it would fall even under the *two miles*. The author proceeds to give a table, formed on a new principle by himself, and which he tested by experiment with that of the commander of her Majesty's ship *Acheron*, to ascertain the distance run during a given period, which seems to have been a very close approximation to that of her *distance by observation*, as given by the commander. He afterwards proceeds to instance several defects in the marine steam-engine, and states that—

The beam-engines, for marine purposes, have been judiciously displaced by direct-acting engines; which, besides shortening the distance between the piston and paddle-wheel, also occupy less space; they are, however, not without faults, of which I shall endeavour to point out the principal. I will consider the direct-acting engines under three distinct classes:—first, those whose piston-rod is confined in a vertical position by means of a parallel motion; secondly, where a vertical motion to the piston-rod is preserved by means of guides; thirdly, where the piston-rod or the cylinder accommodates itself to the action of the crank, and, consequently, dispenses with all these arrangements for keeping the piston-rod in a vertical direction. The variety of the two first-named classes is, I think, a sufficient proof that they have not met the anticipation of their projectors, although a great many have been constructed, to which the name and reputation of their inventors have contributed not less than any intrinsic merit in their construction or performance. It is to the third, or last class, of direct-acting engines that I would beg to draw the reader's attention for a moment. Let us, in the first place, consider the qualities of the oscillating engine; this species of engine has been, I believe, tried and abandoned, entirely through want of proper care and attention; they have of late years again been brought into use for river navigation, especially on the Thames, for which purpose they seem admirably adapted; but not having had anything to do with these sorts of engines, not even seen an indicator-diagram, I cannot offer an opinion of their performance; their adaptation for sea-going vessels seems to me very problematical. Whoever has had the management of marine engines, or paid any attention to the subject, must be aware of the liability of the cylinder to become loose from the sole-plate or sleepers in course of time, in consequence of the alternate action of the piston; and not only that, but we frequently see the lugs, on the upper end of the cylinder, to which the main-framing is attached, break asunder. The beams, or side-levers, are liable to the same accident. That such does not arise from neglect or inattention, nor from want of strength originally in the materials, is obvious; the cylinders were undoubtedly, in the first instance, firmly fixed to the sole-plates, or sleepers, otherwise it would have been immediately detected when the engines were first tried; so also with the lugs and side-levers, had they not been made strong enough at first, the error would soon have made itself apparent. It is only after a length of time that the iron becomes brittle and loses its tenacity, from the repeated jerks caused by the alternate action and reaction of the machinery. Much also depends on the quality of the iron, at least as regards time, for sometimes a beam of an engine will break after a short service, whereas, another of the same engine will last five or six years, or more. But let us again return to the oscillating cylinders: here we have an enormous mass of metal suspended on nearly two points; the whole strain of the engine, with its momentum acquired by the rolling motion of the vessel, is here concentrated on which, while new and in good order, may not be objectionable; but let the gudgeons once become worn, and its tenacious property, by reason before stated, affected, the stuffing-boxes at the same time difficult to keep tight, and the greatest care and management will not prevent an accident.

The author seems to think that the success of the oscillating engine for sea-going purposes is very *problematical*—they are, however, getting into general use, and many of great power have already been introduced into sea-going vessels; and the injury to that noble specimen of naval architecture and engineering, the *Sphinx*, cannot but be regretted by all who feel an interest in the progress of the steam-engine, she being fitted with the largest engines on this principle yet constructed, and which would soon have settled the mooted point of their utility in sea-service. The *Prince Metternich*, an article on which appeared in our last week's Number, is also fitted with engines of this class, and we hope to be able, ere many weeks, to chronicle the successful passage of this noble vessel to her destined port.

The main object of this pamphlet seems to be the introducing to the reader a new form of engine by the author, which consists in an endeavour to obtain all the advantages of the oscillating engine *with a fixed cylinder*—this has been aimed at before, but not in a precisely similar manner to Mr. G.'s invention, the dissimilarity in his patent consisting in constructing the cylinder cover, or a portion thereof, in the form of the arc of a circle, which is fitted with a slide of a similar form, through which the piston-rod works, not in the ordinary shaped fixed stuffing-box, but in one which can adjust itself to the ranging angle of the piston-rod, by means of a ball and socket motion at its lower end, which works in that portion of the circular slide, which traverses backwards and forwards in the cylinder cover—by this means the piston, as it ascends and descends, allows the piston-rod to vibrate, and thereby act directly on the crank. The inventor states that this plan is peculiarly applicable for screw propellers, and also for locomotives. In his pamphlet he shows a very ingenious method of regulating the draught of the flues, by means of a *self-acting damper*—a model of this improved engine may be seen in operation daily at the

Polytechnic Institution. We cordially recommend this little pamphlet to the perusal of our readers, being convinced that careful attention to the suggestions emanating from the class to which the author belongs, is the surest and quickest method of bringing to still greater perfection the mighty power of steam.

GENERAL ACCOUNT OF THE COAL DISTRICTS OF INDIA.

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The coal of India hitherto described is chiefly obtained from the northern and central portions of the Peninsula. The Himalayan range, which forms a perfect barrier, continuous with greater or less regularity, separating India from Northern Asia, is chiefly composed of gneissose rocks, highly crystalline, and penetrated by numerous veins of granite. On the south flanks of the principal chain there may be traced a well-defined subrange of mountains, rising often to a considerable height, and in the western part distinguished by the name of the Sewalik range. These are of tertiary origin, and composed of hard sandstones, extremely fossiliferous. Then succeed the great plains of India —the vast alluvial district through which the Ganges runs, and which, near the mouths of that river, spread out to an enormous area, receiving also the waters of the Burhampooter, and forming the joint delta—one of the most remarkable in the world—on which Calcutta and a multitude of important towns are placed.

On the right, or south bank, of the Ganges, and on the left (also the south) bank of the Burhampooter, the granitic and gneissose rocks, which are covered up to a considerable distance by the alluvial mud of the two great rivers, reappear: they form the range of the Garrow and Cassiar Mountains—commencing near Silhet and extending eastwards, and, by a number of inferior ranges, running at last into the Vindhya range and passing towards the west. It appears to be chiefly in hollows, or basin-shaped depressions in these granitic rocks, that the coal of Northern and Central India exists.

Before proceeding to give an account of the various districts that have been described as presenting coal, it may be as well first to allude to the rocks ordinarily associated with it. These are limestones, often poor and argillaceous; sandstones of various kinds; clayey and shaly beds; and bands of ironstone. The coal is in layers of various thickness, sometimes very considerable, but more frequently poor and unequal.

The limestone is said generally to underlie the coal; but its thickness is not known, nor are there any clear and distinct accounts by which it can be identified. It is, no doubt, barren of fossils for the most part, but certainly not always; and careful investigation might discover some specimens which would be useful in determining its age and identifying distant beds.

The coal and shale appear to be associated much as in the other coal districts, and there can be no doubt that the shale contains fossils. It is of the greatest importance that these should be forwarded to England for examination and comparison.

The shale appears to become gritty in its upper members, and passes into a gritty micaceous brownish-grey sandstone, sometimes becoming flaggy. This sandstone is said to form the surface rock generally in the coal districts, and to be presented in low round-topped hills and undulated ground.

The coal that has been found of the greatest value, in point of quality, in India is considered to be that lowest in position; and that occurring east of Bengal, in Assam, is said to be better than that met with in the western district. The Silhet and Nerbudda are accounted the best of all; and, according to present appearances, will prove the most available and lasting sources of supply.

The coal districts of India may be considered as five in number—three in Northern India, and one in Cutch; while the fifth includes the province of Arracan and the coast of the Burman empire, near Tenasserim. Of these the Cutch coal is certainly not of the carboniferous epoch; and it appears to be of little importance at present, and unpromising. The whole district, extending from the neighbourhood of Hoosungabad, on the Nerbudda River (lat. 22 N., long. 78 E.), on the left or south bank of the river, and extending in a north-easterly direction for a distance of about 400 miles to Palamow, thence eastward for 250 miles to Burdwan, near Calcutta, and running northward for 150 miles to Rajmahal, exhibits, it would appear, at intervals by no means distant, a continually repeated outcrop of rocks, consisting of sandstones and shales, with occasional limestone. Throughout this wide tract a number of beds of coal have been recognised, of variable thickness and value, but all appearing to exhibit evidence of the existence there of a great coal district.

On the flanks of the Garrow Mountains, near the Burhampooter, and on both banks of that vast river, we find another—perhaps a continued—outcrop of similar beds, also containing coal, and reaching in a north-easterly direction for nearly 400 miles. The intermediate plains, whose breadth between Rajmahal and Jumalpore is about 100 miles, are chiefly alluvial; and thus it is possible that there exists a vast range of carboniferous strata, reaching for upwards of 1000 miles along the flanks of the Himalaya Mountains, the distance from the mountain chain gradually increasing as we advance westward, the mountains trending northwards and the outcrop of the carboniferous bed southwards, until finally, the distance being upwards of 500 miles, the relation is not easily recognised.

1. Commencing with the neighbourhood of Calcutta, we have first to consider the Burdwan coal district, with which I shall group the Adji and the Rajmahal fields, all these being on the banks of either the Hooghley or Ganges, or on the tributaries of these rivers. The Burdwan district has been long known, and a good deal worked. The workable beds of coal are 9 and 7 ft. thick respectively. They are associated with sandstone, shale, and a little clay-ironstone, and about six other thinner seams of coal, while other thick beds are mentioned, but their real existence as separate beds is doubtful. There are now 13 spots at which this coal is worked, but most of them are surface workings. The deepest sinking is 190 ft. The distance to Calcutta is about 90 miles, but the actual transit of coal is nearly 300 miles. There would seem to be a continuous outcrop of the same kind of rocks from Burdwan up the Adji river, and northwards to Rajmahal. On the Adji river the coal has been worked in more than one spot, and is found to be of about the same quality as that of Burdwan; but neither of them is considered of nearly so good a quality as the English coal. Further on, at Rajmahal, coal is known to exist, but has not yet been much worked. The quality of that which has been obtained does not appear good.

2. The Burdwan coal-field appears to be directly connected with a district at Palamow, in which coal has been worked in no fewer than four places. The coal here apparently reposes in a valley enclosed by hills of granite, and is associated with a good deal of iron. There are several beds that are of workable size, but a good deal of the coal is heavy and of inferior quality, and some of it appears to be anthracitic. These coal-beds are not far from the Soane river, and about 100 miles from its confluence with the Ganges, a little above Dinapoor and Patna; but the Soane is not at present navigable. To the west of Palamow, the carboniferous beds are described as appearing along two irregular lines—the one towards the south-west for 150 miles, reaching beyond Koorbah; and the other more westward, by Sohagepoor, to the Nerbudda. These beds appear to connect themselves with the Burdwan coal-field; and near Ramgurh coal has been obtained in two or three places. This coal is said to be of very good quality, and of considerable thickness; but there can be little doubt that the statement made in the report, of the bed of coal being 200 yards in thickness, must be owing to some misunderstanding of the account and sketch originally communicated. It seems certain, however, from the extent of the outcrop, that the seam must be one of considerable magnitude. Westwards, again, from Palamow, at a distance of about 50 miles, coal has been found in several places in Singrowli, but the beds at present known are thin; and again, to the south-west, the same mineral occurs at Sirgoojah, where fine coal has been seen, but is not used at present. Between the Singrowli coal and Jubbulpore, excellent coal has been found in several places, indicating an extensive coal-field; but the nature and thickness of the beds are not stated.

The Nerbudda district, although from the drainage of the country it belongs to the Bombay side of India, is manifestly more related, so far as the old rocks are concerned, with the Bengal territory. The coal is about 350 miles from Bombay, and the Nerbudda river is at present not navigable. There seems to be three districts in the Nerbudda valley in which coal is found, but the most important of them is that near Gurrawarra, about midway between Hoosungabad and Jubbulpore. The coal here, indeed, appears to be, perhaps, the best hitherto found in India, and exists in beds three in number, whose thickness respectively is said to be 20 ft., 40 ft., and 25½ ft. There are also other beds, one of which is 4 ft.

The discovery of this, the Benar coal-field, promises to be of great importance. It is also very near another basin, where there are beds also of excellent quality, one of them 6 ft. in thickness. At Jubbulpore itself coal has been found at a depth of 70 ft., one bed being nearly 12 ft. thick.

3. Let us consider now the district east of Calcutta. We there find true carboniferous rocks on both flanks of the Garrow Mountains, commencing near Jumalpore, and thence continuing north-eastwards, for a distance amounting on the whole to nearly 400 miles, through Lower and Upper Assam. The district nearest Calcutta is Silhet, on the south flanks of the Garrow, where 11 beds of coal have been determined, whose total thickness, as already ascertained, amounts to 85 ft. This coal is of excellent quality, and can as readily be conveyed to the Upper Ganges as the Burdwan coal. The most remarkable beds occur at Cherra Ponji; but these appear irregular, although they are undoubtedly of great thickness in several spots, amounting, sometimes, to nearly 30 ft. There are also other important beds. They have been known for more than 10 years, but have not been worked; and since their first discovery large quantities of iron have been smelted with charcoal.

After passing the districts in which the coal has been thus clearly exhibited, we proceed next to the Assam districts, also more or less continuous, and extending for about 350 miles, chiefly along the south side of the Burhampooter; the whole being divided into the two groups of Lower and Upper Assam, separated at Bishenath, 170 miles above Calcutta. Six coal-fields are enumerated in the upper district, and three in the lower; but the latter, although it would seem not so promising, are looked on as scarcely less important in consequence of their greater accessibility.

So far as details are concerned, the Lower Assam coal offers little positive information; the indications consisting rather of rolled fragments drifted, than of distinct and well-marked beds. It is called lignite in a report from Lieut. Vetch; but both coal and lignite are terms frequently used without preference to any peculiar character of the mineral, or any geological position. Similar beds of coal or lignite to those found in Lower Assam, south of the Burhampooter, are also mentioned as occurring on the north in three of the streams flowing into that river from the Bootan range. The Upper Assam coal is manifestly of great interest, and likely to prove very important. It is associated with abundance of clay ironstone.

About 80 miles above Bishenath, other beds, stated to be 6 ft. thick, have been worked for the sake of trying the economic value of the coal. It is described by the commander of one of the Assam Company's steamers, in a letter dated January 24th 1845, as far the best he ever had on board a steamer, and far superior to any coal in Calcutta. From the growing importance of the tea-trade from Assam, this is likely, therefore, to be of great value. Still further up the country there are several important beds, dipping, it would appear, at so high an angle, and placed so unfavourably with regard to the present means of transport, that it would be difficult to work them. The other beds that appear in this district are exposed to the same difficulty; and the coal throughout Northern India appears to be in this respect unfavourably placed.

Passing on now to the other districts in India and the east, in which carboniferous rocks and beds of coal have been met with, I have to enumerate two, the Tenasserim and the Arracan districts, which, from their vicinity to India, and their geographical position, are of considerable importance. The former has been known for some years, and there are said to be four localities at which coal appears; but of these only one seems likely to prove of economic value. From the accounts given of this coal, there is every reason to conclude, that one of the beds is not of the carboniferous period; and although another (on the Thian Khan) has been the subject of a far more favourable report, being called cannel coal, and stated by Mr. Prinsep to be an admirable coal for gas, there is yet much probability of the whole being of the tertiary period. These beds have been described in the *Journal of the Asiatic Society* for 1838.

In Arracan there are 11 beds of coal, but all of them are thin, and their position nearly vertical. They are said to be associated with sandstones, limestones, and shales; but it is clear that they can at present be looked at only as indications, and not of any practical importance. Such is the general account of the coal districts of India, so far as I have been able to glean evidence from the report of the committee for the investigation of the coal and mineral resources of India for May 1845.

Connecting, as I think we cannot help doing, the general geology of Asia with that of Europe, and looking at the wide extension of true coal-bearing rocks in the northern hemisphere, tracing these rocks, as we are able to do at intervals, from our own country eastward through Belgium, Northern Germany, Bohemia, and Silesia, and thence across to the valley of the Donetz, watching the development of the older beds of the Devonian period in Armenia, and thence on the northern side of the great Himalayan range, discovering them in their most characteristic form in the Altai Mountains, and finding them also on the south flanks of those lofty mountains in the neighbourhood of Calcutta, where the Burdwan beds may probably be regarded as their representatives; there is certainly no reason for wonder if these carboniferous beds, in their most typical and valuable form, should be traceable also throughout Northern India. For what is the geological structure of that country? The Himalaya Mountain chain, the great backbone of Asia, are probably to be looked on as having been elevated much more recently than the Alps. In India the great Sewalik tertiaries are lifted into hills which elsewhere might well deserve the name of mountains; and whatever the conditions may have been subsequently to the original deposition of the beds, there is no reason why, in a country where the scale is in everything so vast, there should not be a continuous outcrop of carboniferous rocks for hundreds of miles together. In consequence of movements of very recent date, wide tracts of India, occupying tens and almost hundreds of thousands of square miles to the south, are covered with basalt, and other large tracts of still greater extent by modern and almost alluvial formations, providing by their decomposition the most prolific soil in the world. Between and amongst this extent of modern eruptive movement, and forming, perhaps, a barrier to some of the beds, comes into the great range of carboniferous beds, exhibited at intervals through the country, nearly parallel with the great range of disturbance, and also greatly disturbed and elevated, and broken into small basins. So far as the evidence goes, it seems then probable that the coal found near Burdwan to the north and west, and apparently continuous with it, may be of the same age. If so, analogy would suggest that the similar and similarly situated beds much further to the west, but still nearly continuous, are also of the same age; and the districts to the east contain, it would seem, some coal so like the other in quality, that here also we should expect contemporaneity.

But, on the other hand, it is by no means impossible, when we consider the extent to which the tertiaries are developed in the great range of conglomerates on the flanks of the Himalaya, and the similar and almost equally fossiliferous deposits on the banks of the Irawaddi on the east, and in the Gulf of Cambay on the west; that, after all, these beds are not carboniferous, but merely occasional and irregular bands of modern or tertiary lignite. Should this be the case, it will be necessary and interesting to determine the point, and recognise, if possible, the actual extension of the Burdwan field. The relation also of these beds with those of the Altai Mountains by a comparison of fossils is an important and most interesting point.

The true age of these beds is a matter of great moment. A vast and most important subject is presented for consideration, but, unfortunately, the evidence is imperfect in a most important point. These beds of coal, occurring chiefly in granitic basins, and often detached, may be, and some at least of them most likely are, of the carboniferous age; they may, however, be oolitic, like the imperfect coal of Cutch, and of some parts of our own country, or they may be tertiary lignites. Now, it may seem of little importance to the mere surveyor what the geological position of these beds may be, provided there is the material he needs; but experience renders it probable that on the mere question of age does, in fact, depend much of their true economic value. Could it be satisfactorily shown, that throughout the wide district of Northern India, there is a true outcrop of carboniferous beds—such as occur in England, in America, and even in Eastern Australia, there can be no question that the value of a very large part of the possessions of England in the east might be considered much increased; for the beds would then probably be steady and permanent, and the application of the resources in knowledge and wealth of a great, a rich, and an enterprising people, would very soon bring into operation, in all those districts, manufactures and commerce on the grandest scale. The navigation of the rivers, the state of the roads, the means of communication by railroads, would be immediately established, or permanently improved; and the result must be improvement in the condition of the country.

Should it, on the other hand, appear that these so called coal-fields are merely detached basins of lignite, whether tertiary or oolitic, they would, in all probability, be of variable and local thickness: their value might appear considerable at the first glance, but it might even not repay the expense of working; the quantity would be much less than was calculated, the quality would not improve in deep workings, and the real and important uses of mineral fuel would not be recognised in it. A small amount of strict geological knowledge and a few fossils would have tended to set at rest this question, which is really one of great importance.

The result of the inquiry already made being thus incomplete, it must be considered unsatisfactory, though, no doubt, highly suggestive for future investigation. Little value can be attached to mere statements of the existence of carbonaceous matter in beds, because many of the important practical conditions are independent of the appearance and experiments on detached fragments, and are learned only when such an amount of detail is given with regard to the geological conditions under which the coal appears, that we may fairly judge of the probable extent of the deposit.

A series of observations, then, connecting any of these apparently detached deposits by uniformity of association, or still more by an identity in the species of fossils obtained from them, would be of the greatest practical benefit, and would assist in enabling us to form sound conclusions with regard to their value. To make such observations should be the object of every one who has the opportunity of travelling across Northern India. It will be long before a matter which involves so much detailed personal investigation, and the grouping together of so many facts, is fully accomplished; but, meanwhile, every accurate observation of dip and strike—every section across a district—every map, however rough, of one of the detached basins—every specimen of fossil which will give only a few leaves of ferns or characteristic portions of a shell—will be a step in advance, and will bring us nearer the time when we shall have a clear and distinct idea of the true mineral riches of India in this important respect.

RAILWAY IMPROVEMENTS—VULCANIZED INDIA-RUBBER SPRINGS.

At the meeting of the Society of Arts, on the 14th inst., a paper was read "On Fuller and De Bergue's Vulcanized India-rubber Springs for Buffers, &c." The application of caoutchouc, or India-rubber, to railway purposes, has of late years occupied, more or less, the attention of scientific men. Possessing, as this material does in a very high degree, the properties of flexibility and elasticity united with great tenacity and power of resistance under heavy pressure, its adaptation to various important and valuable purposes in mechanics was too obvious to have escaped notice; yet its liability to become hard and rigid when exposed to severe cold, and on the other hand soft and clammy under the influence of heat, were serious drawbacks to its extensive application; and it was not until very recently that the method of preparing it, by a patented process termed "vulcanizing," has imparted a value and importance to this simple material which is likely to lead to its much more extensive adoption in this and other departments than has hitherto been known. The process referred to (and which is now pretty generally understood) consists principally in the admixture of sulphur and some other ingredients at a high temperature (see Hancock's patent, granted in November, 1843), by which perfect elasticity is obtained, and non-liability to be affected by any heat or cold of climate. The present invention, for which a patent was granted in October, 1845, is for the application of the material above described for the purpose of buffer and other springs of railway carriages, according to various modes therein specified, and of which we shall now proceed to furnish a description. Instead of the steel springs, as at present, the patentees use a succession of rings or discs of India-rubber of various diameters, from 4 in. to 6 in., according to the position and strength required, and from 1 in. to 2 in. in thickness. These are placed on the buffer-rod (which passes through the centre), and are separated by thin iron plates; each plate is provided with a conical collar, which serves to keep the India-rubber firmly in its place, and at the same time admits of free expansion and contraction without coming into contact with the rod.

The advantages attending the use of this material over steel are numerous and striking. In the first place, their weight being scarcely a tenth part of that of steel, they may be placed in any part of the carriage, whilst the saving of weight in a long train (amounting to several tons) will to some extent economise the locomotive powers. Next we have their extreme simplicity, and the impossibility of their being damaged or broken, even in a collision. An opportunity occurred of proving this a few weeks ago, when an engine fitted with these buffers ran off the line near Hull, the iron-work being considerably damaged and broken, but the rings altogether unhurt. Another advantage in these springs is, the greater ease with which they are acted upon at first starting, being at the outset more flexible and yielding than steel; whilst the power accumulates so rapidly under pressure as to prevent the possibility of the buffer-head being brought to a dead hard stop, the benefit of which in concussions is sufficiently obvious. Another important and distinct advantage is the facility with which their power may be regulated. It will be evident, on inspecting one of the larger rings, that its power of resistance will be in proportion, first, to its diameter (or, more strictly speaking, to its superficial area), and next to the proportion which such diameter or area bears to its thickness; thus, a ring of any given diameter or area, 3 in. thick, would be much more easily acted on and reduced to half its bulk than one of 1½ in. thick. The convex form taken by the India-rubber being in the latter case much more sudden, and requiring the exertion of nearly double the power. From this it will be at once evident that, by employing a greater number of separating plates in any given distance, you have the power of regulating these springs to the greatest exactness. The patentees state that the price of these springs (including patent right) will not exceed that of steel, but will probably be something less. Several engines and tenders have been fitted with these buffers at Wilson's Foundry, Leeds, and are now in daily successful operation on different lines. Several others are in course of erection at the manufactories of Messrs. Hick and Co., Bolton; Messrs. Sharpe and Co., Manchester; and Messrs. Lawson and Sons, Leeds. Several carriages have also been in daily use on the Great Western line for some months past, and are very highly spoken of. Upwards of 50 are being constructed at the works of Messrs. Fox, Henderson, and Co., near Birmingham, for the Marie Antonia Railway, under the superintendence of Mr. Brunel. Experiments, as to the exemption of this material from being affected by the severest frost, have been made by the patentees during the past winter at St. Petersburgh and other parts of the continent, the results of which are quite conclusive. Many of the rings have also been subjected to a pressure of 60 to 100 tons, and reduced to the thickness of 1-16th of an inch without the slightest damage, resuming their shape immediately on the pressure being removed. One of the largest was lately put under Nasmyth's steam hammer, and after receiving more than 200 blows remained equally uninjured. They are also about being applied as bearing springs, both for engines, tenders, and passenger carriages.

There has been established in Paris, a general company for the purchasing and clearing the uncultivated or waste lands of France. This company, which presents itself to capitalists under the auspices of the Minister of Agriculture and Commerce, surrounded by peers of France, and the leading agricultural men of the country, ought to be assured of the encouragement set forth by us, to embark in so vast an undertaking. In our advertising columns will be found the prospectus of a company about being established in Paris—the projectors of which sincerely appeal to the sympathies and co-operation of all men in the grand work they contemplate, by striving to insure its success, as they will, at the same time, serve their own interests, and show an act of intelligence, and a laudable sympathy, for what may be justly called a European enterprise.

Mining Correspondence.

ENGLISH MINES.

BARRISTOWN.—The lode in the 18 fm. level end, west of flat-rod shaft, underlay at present 3 ft. in a fathom, and worth from 18*l.* to 20*l.* per fm.; the rise, behind this end, has rather improved, worth about 16*l.* per fm.; the south part of this lode also (working on tribute) looks well. In the 12 fm. end west, the lode is still worth about 10*l.* per fm. At the south cross-cut, in the 18 fm. level, we have opened about 6 fms. on the lode (above the level),—it continues very regular in its underlay, and value from 16*l.* to 18*l.* per fm.; in the winze, sinking under this level, the lode is at present poor; but, from the perpendicular wall, and ground about it, I have no doubt it will improve again shortly; there is no change in any other part of our operations since my last; the pitches in the western part of the mine are looking a shade better.—T. ANGOVE: April 16.

BEDFORD UNITED.—At Wheal Marquis, we have cut the capels of the lode in the 80 fm. level, which appear to be very large and hard, and producing good stones of ore; we hope to cut the main part of the lode by the end of the week; the lode in the sump winze is 3 ft. wide, and worth from 20*l.* to 30*l.* per fm. In the 70 fm. level east the lode is 2 ft. wide, composed of spar, mundic, and ore. There has been no lode taken down in the 58 fm. level east since last report. At Liscombe, the lode in the adit level is 2 ft. wide, producing good stones of ore—a very kindly lode; and in the rise in this level the lode is 2 ft. wide, composed of spar and mundic, with good stones of ore. There has been no lode taken down in the adit level.—JAMES PHILLIPS: April 20.

CALLINGTON.—In the 125 fm. level south the lode is divided by a horse of killas and rather disordered; the eastern branch is producing good work for silver-lead ores, and the branches now appear to be approximating each other; in the north end the lode is producing silver-lead ores. In the 112 fm. level north the lode has not been taken down; in the south end it is producing silver-lead ores, and promising improvements. In the 100 fm. level, both north and south, we are opening tribute ground—the same remark will apply to the 90, in both directions. In the 80 fm. level we have a rich branch of silver-lead ores in favourable ground; the back will pay for working in a low figure. At the north mine, we are making preparations to sink below the 100; in this level, driving south, we are opening ground that will suit a low figure; in the north end the lode is poor. In the 90 fm. level south no lode has been taken down. In the 70 and 40 fm. levels east no alteration has taken place. We expect to sample 100 tons of silver-lead ores in the course of the next week.—J. T. PHILLIPS: April 19.

CUBERT SILVER-LEAD.—We have cut nothing more in the 35 fm. level cross-cut since last reported—the ground here is very wet, kindly for lead; the sumpmen are preparing for sinking under the 35 fm. level as fast as possible. In the 25 fm. level west the lode is 18 in. wide, composed of spar, mundic, and some good saving work; in this level east the lode is 2 ft. wide, producing 1 ton per fm. of silver-lead. In the 15 fm. level east the lode is 2 ft. wide, spar, mundic, and good stones of lead—still a very kindly end indeed. The tribute department is not looking so well as we could wish. 60 tons of silver-lead ore sold to Messrs. Walker and Co., for 12*l.* per ton, on Saturday last.—F. R. ROWE.

DRAKE WALLS.—Since my last report of the above mine, the stopes, both east and west, in the back of the 50 fm. level, going west, are much improved; the branches are large and rich. The stopes, east of machine-shaft, in the 40, are still poor, not yet got through the cross-course. In the end and stopes, at engine-shaft, no alteration. I hope the crusher will be ready to work by the 30th inst. The stopes at footway shaft are tinny. The sampling of tin, I believe, will be 17 tons; but will not be ready to sample until the end of next week—the new process takes more time than was calculated on.—RICHARD WILLIAMS: April 17.

DEAN PRIOR AND BUCKFASTLEIGH.—I have put two men to cross-cut north in the bottom level, east of the engine-shaft, in order to cut through the lode to the north wall. In the 80 fm. level west the lode is about 1 ft. wide, composed of spar and mundic. In the 40 fm. level we are at present driving on the south part of the lode, and shall continue to do so a fathom or two more before we cross-cut north, to ascertain its size and quality. In the rise at the back of the bottom level west, just behind the present end, the lode still maintains its very promising character; the orey part of the lode is about 12 in. big—good saving work, with ore of rich quality. We shall lose no time in order to hole the winze from the 40 to the 50, being so desirable an object as to ventilating the levels; and not only so, but I anticipate the most favourable results, as a great quantity of ores will, no doubt, be raised between the two levels, by stoping the backs, &c.—H. CHOAKE: April 21.——The active prosecution of this mine has in some measure been impeded of late from the necessary surface works, and want of ventilation. Under such circumstances, any report upon the mine can only be considered with reference to past operations and prospects, rather than to the present workings. The 20 fm. level, below adit (which latter is 30 fms. from surface) has been driven 60 fms. west, where there are some pretty branches of ore, the sulphuret producing 12 to 14, and horsefleah ore from 18 to 25, the ore ground going west with the lode in depth. A rise is being carried from the 20 to the 10 fm. levels below adit, in orey ground, which is now about 3 fms. up towards the 10 under adit, or 40 from surface, which level is in advance some 3 to 4 fms. west of the 20. The air in the ends precludes a full pare from working, until a communication be made between the two levels, so that little or no progress can be made in driving west at the present time. I may here observe, that the acquisition of the adjoining sett from Mr. Buller, is of infinite importance; as from the lodes running west into that property, and holding down with a south underlay, the present ore ground, and that dipping west, would very soon be out of the original sett, although there is a considerable extent east. There is a caunter lode running nearly north and south, which will intersect the present lodes about 70 fms. from the present end, in the newly acquired ground. It may at a future time be deemed desirable (as, indeed, the present appearances would indicate) that a shaft should be sunk further west, so as to come on the ore ground. This, however, remains yet to be determined, and does not claim immediate attention, but which, assuming the ore to continue its dip west, would be highly desirable, as coming on the lode, and being economical in raising the ore to surface; while I may observe, that the water-power available may be brought over a wheel, fixed on the upper ground, to command the shaft. I would suggest the lower wheel being applied to a crusher or grinder, for the purpose of reducing the ore, and also to some matters at surface, which I have entered into with the agents.—HENRY ENGLISH: April 21.

DEVON AND COURTENAY CONSOLS.—The 80 fm. cross-cut, at engine-shaft, is in 3½ fms.; there is still a great deal of spar mixed with the killas, with some ore in the spar. The lode in deep adit (on south lode) is not so large as it was last week, but the appearance and properties are much the same. The lode in shallow adit (on north lode) is 2½ ft. wide, containing more lead and mundic than I have seen in the end at any time within the last two months, and looking very promising. The lode in flat-rod shaft (on north lode) has just the same appearance as last reported, looking very promising.—J. JOB.

EAST CROWNDALE.—The ground in our engine-shaft still continues favourable for sinking, it is now down 34 fms. 3 ft. In the shaft on the north lode, at Rix Hill, the lode is about 18 in. wide, composed of spar, capel, peach, and tin—in fact, the greatest part of the lode is good saving work. The ground in the adit level, towards the Rix Hill lodes, is getting harder, in consequence of which the lodes will not be seen so soon as at first calculated upon. Our engine and pitwork are all in good order.—S. PAULL: April 17.

EAST TAMAR CONSOLS.—At Whitson, the lode in the 60 fm. level north is 15 in. wide—fluor-spar and silver-lead ore; the lode in the 60 south is 14 in. wide, work of a good quality. The 54 north is in slidy ground; the lode in the 54 south is 2 ft. wide, capel, mundic, and lead. The lode in the 46, south from Gourd's, is 2 ft. wide—fluor-spar and ore. At Furzehill, the lode in the 46 north is 2½ ft. wide, very much improved since last report; the lode in the 46 south is 2 ft. wide, saving work. The lode in the 38 north is 14 in. wide, saving work; the lode in the 38 south is 18 in. wide, a very kindly lode.—B. ROBINS: April 20.

GUNNIS LAKE.—At Chilsworthy, the lode in Bailey's engine-shaft, is 2½ ft. wide, composed of capel, gossan, spar, and ore. The lode in the 12 fm. level west remains disordered; we are still driving south in the 12 fm. level east.—W. RICHARDS: April 20.

GREAT MICHELL CONSOLS.—The engine-shaft is down below the 22 fm. level 10 fms. 4 ft. 6 in., the lode in which is composed of spar, mundic, fluor, and stones of ore.—T. RICHARDS: April 20.

HAWKMOOR.—In the 15 fm. level, east of Hitchins's shaft, the lode is 2 ft. wide, producing very good stones of copper ore—a kindly lode.—P. RICHARDS: April 20.

HINGSTON DOWN CONSOLS.—The lode in the 20 fm. level, west of north shaft, is 2½ ft. wide, producing good work for tin; the lode in the pitch, in the back of this level, west of shaft, continues to yield good returns.—W. RICHARDS: April 20.

HOLMBUSH.—The ground in the diagonal shaft, sinking below the 120 fm. level, is still as favourable as we can reasonably expect to find it, and the branches in it still maintain their character, as to the underlie, position, and general appearance; the lode in the 120 fm. level, west of the great cross-course, is 6 in. wide, composed of spar, spots of ore, and mundic; the lode in the 120 fm. level, east of Hitchins's shaft (on the north part), is still split in two parts—each part or branch, 6 in. wide, producing stones of ore of good quality, and apparently are approaching each other. The lode in the 110 fm. level, east of Hitchins's shaft (on the south part), is 10 in. wide, composed of soft spar, and stones of lead. The lode in the 100 fm. level south, is 2½ ft. wide, composed of spar and stones of lead; the lode in the rise, above the 100 fm. level, is 2 ft. wide, composed of spar, prian, flookan, and spots of lead; the lode in the 100 fm. level south, is 3 ft. wide, producing about 5*l.* worth of lead per fm. The lode in the 90 fm. level south, is 2 ft. wide—flookan, spar, and sprigs of lead, scattered throughout the lode.—W. H. LEAN: April 20.

ILAM.—The 67 fm. level, west of Robins's shaft, remains the same as last reported; but there is more water coming from the end, which is driven from the shaft 4 fms., and the end east is driven about 3 fms., so we cannot be far from cutting Brown's lode in either of the ends—if it is not thrown by a cross-course, or that the change of ground cut in the shaft may not have the lode—this is to be proved. The western end is extended to cut a plat, but I should like to see Brown's lode first—and which I fully hope to cut by to-morrow week, which is our taking-day, and then I shall be able to judge which will be the best step to take.—J. Sprague: April 16.——At the bottom of Robins's shaft, in the 67 fm. level west, no lode has been taken down since last report; in the east end the lode is a little improved; in this end we have intersected a branch from 3 to 4 in. big, running nearly at right angles with Robins's lode; but I am satisfied it is not Brown's lode, as this branch is to be seen above in the cavern; and if it was the lead lode, in my opinion, we should have let down the water from the level above. In the 42 fm. level, west of Robins's shaft, the lode is in a disordered state, owing to a different channel of ground cut in the end; it appears to me like a slide, about 6 in. big, running across the end.—J. Sprague: April 20.

KIRKCUDBRIGHTSHIRE.—The lode in Stewart's shaft is 4 ft. wide, producing stones of lead. The lode in the end, driving west, in the 30 fm. level, is 6 ft. wide, worth 30*l.* per fm.; the end driving east, in the same level, is 3½ ft. wide, composed of spar, and other components likely to produce lead. The end driving east, in the 20 fm. level, continues with but little alteration. The backs, in the 30 fm. level, east of shaft, are improved, worth 15*l.* per fm.; ditto west, worth 9*l.* per fm. Having addition to our reserves here, we propose to put on an additional force of men in the coming week. The adit end has not yet improved going east. With a view to force down Keith's shaft, we have increased our forces to unwater this point.—J. Buzzo: April 17.——Regarding our discovery of lead in the 30 west, it still looks well; and, although, I think we have not the north wall of it, yet I reckon it worth 30*l.* per fm.; stripping it down, going back from the end, we found it recoiled on the lode again—hence we have only an enlargement of the lode, with an increase of ore; but, inasmuch as there must be some cause for this, we propose to cross-cut a little here some future day, when the place will be less incumbered. On the whole, I am rather led to think it is occasioned by the intersection of a branch; but which, nevertheless, has to be proved.—J. Buzzo: April 20.——Regarding the discovery of ore in the 30 end, going west, in addition to my remarks of yesterday, I can only add, that the lead continues in the end much the same, but we are not yet satisfied as to the width of the lode. We are blasting down more of the north side, and still find a mixture of lead in spar. We have opened out about 14 to 15 ft. in length upon this ore, but whether it is a part of the original lode, or whether its formation owes its existence to another lode or branch, we cannot yet determine; in the meantime, however, we are exploring it as fast as possible.—J. Buzzo: April 21.

LANIVET CONSOLS.—The leader part of the lode in the 80 fm. level east is 1 ft. wide, producing but a small quantity of ore—this is on the south part; in the 80 fm. level west we are driving on the north part of the lode; the leader part of which is 18 in. wide, at present unproductive. In the 80 fm. level east we are driving on the north part of the lode, which is 3 ft. wide—good saving work. The diagonal shaft is completed to the bottom of the 70 fm. level; we have made preparation to sink below that level. We have for our sampling, on Monday next, 100 tons of ore.—Henry Williams: April 17.

MENDIP HILLS.—The lode in the 38 fm. level, south of Stainsby's shaft, has been in rather a disordered state during the past week, occasioned by a number of small branches of white spar forming a junction with the lode, at which point it is very large, composed principally of flookan and spar, with rich stones of lead at times—present price for driving, 40s. per fm. In the slag department, I have nothing particular to inform you this week. We continue to press forward with all possible dispatch in opening and preparing the ground for laying down the tram-road; I have also commenced making a thoroughfare through the wood, in order to bring the water around the hill, so that no time may be lost in fixing the launders, &c., when made.—F. C. Harpur: April 19.

NEW EAST CROWNDALE.—The lode is rather disordered to the east of the cross-course, but the several branches are falling together as we extend east, forming a large lode between the walls; its component parts are mundic, spotted with copper, intermixed with spar, and white prian; the killas is a dark blue, similar to the strata of the Wheal Friendship Mine. I am fully satisfied as regards the regularity and prospects of the mine—so as to warrant arrangements being at once entered into to carry it ont on a more extensive scale, whereby I consider it may be confidently anticipated that it will prove a very productive and beneficial undertaking to the proprietors, more especially as the lode made so decided an improvement in the 24 fm. level, where it was intersected opposite the shaft, producing good stones of copper ore of excellent quality.—J. Carpenter: April 19.

SILVER VALLEY.—The ground in the engine-shaft, sinking below the 40 fm. level, continues very favourable. The silver lode, in the 30 fm. level driving west, has much improved in appearance since we commenced driving; it is now about 15 in. wide, composed of flookan, quartz, and carbonate of iron. In the 20 fm. level west the lode contains spots of silver and silver-lead ore; we are saving a little work, but it is not rich; the rise in the back of this level is holed, which has well ventilated the level, and we shall now commence stoping the silver ground. In the 10 fm. level east the main or north part of the lode has a favourable appearance, composed of flookan, carbonate of iron, and mica. At Wheal Brothers, we have done but little in clearing the deep adit level since last report, as the men have been employed in repairing the western whim-shaft, in order for drawing the stuff to surface; this is completed, and we shall now resume clearing the level westward. We have sampled to-day about 4½ tons of tin, and to-morrow we shall sample about 6½ tons of silver ore.—S. Richards: April 19.

SOUTH FRIENDSHIP WHEAL ANNE.—The water is in fork to the 18 fm. level; I was underground on Monday last, and am happy to say the lode in the bottom, as well as the back, of this level, is looking very kindly, carrying two regular smooth walls, underlaying about 2½ ft. in a fathom—and is about 2½ ft. wide, 10 in. of which is spotted with copper. I broke some good stones of copper, within 4 fms. of the cross-course shaft, just of the same quality as that we sampled, which brought 13*l.* per ton. We have four men clearing the mill-house shaft, and have discovered the lode in the eastern part, which is about 2 ft. wide, the whole of which is spotted with bright copper—we have not yet surveyed the western part of the shaft; I hope in a day or two to set on tribute, and I have no doubt but we shall raise several tons of copper of good quality. I cannot say anything as yet respecting the other parts of the mine; and I beg to remind you, that it is not in the workings of the old company that we expect to find a rich or profitabe mine; if we find any levels in the old workings, which will set on tribute (and of this I have little doubt), it will ease, or perhaps pay, all our costs in driving to cut the lodes east and west, which we have discovered, but which never were discovered by the old company (which did not, to the east, come into the old company's sett)—and if such be the case, our prospects will be great indeed. The sumpmen are engaged in cutting down the shaft from the surface to the 10 fm. level, as well as in cutting ground to fix our fend-off bob, so as to drop the lift to the 20 fm. level. Our wheel keeps the water at the rate of three revolutions per minute quite easy. —John Spargo.

SOUTH TAMAR UNITED.—The men are getting on very satisfactory in clearing and securing the adit level; the engineers are getting on with all possible dispatch in the erection of machinery, which will be completed in about a fortnight; we have commenced heaving in our pitwork.—B. Robins.

SOUTH WHEAL TRELAWNEY.—Sobey's lode, in the adit south, is 2 ft. wide, composed of white killas, spar, silver barytes, gossan, and sprigs of lead, with a beautiful appearance. The cross-cut west, from Snell's shaft, is driven at the adit level, ground favourable, water not so quick as last mentioned.—W. Jenkin: April 19.

TRELEIGH CONSOLS.—In the 110 fm. level cross-cut, north-east of Christoe's, in this end, we have cut a branch 8 in. wide, with good stones of ore; we shall drive still north. In the 100 fm. level, east of ditto, the lode is 2½ ft. wide, but very little ore. In Garden's shaft, below the 90 fm. level, no alteration in the ground, still hard, and in elvans; in the 90 fm. level, west of ditto, the lode is 2 ft. wide, worth 20*l.* per fm. In the 80 fm. level, west of ditto, the lode is 2½ ft. wide, worth 8*l.* per fm.; in the 80 fm. level, east of ditto, the lode is 3½ ft. wide, worth 35*l.* per fm. The rise, above the 70 fm. level west, is holed—the men will sink a winze east of Garden's shaft; the winze, below the 70 fm. level, east of Garden's shaft—these men will sink the winze ou the 80 fm. level, east from Garden's shaft; the 70 fm. level, west of Good Fortune, is holed to the shaft, lode 3 ft. wide, worth 8*l.* per fm. Symons's shaft, below the 60 fm. level, is holed on the 70 fm. level, west of Good Fortune; the 60 fm. level, west of Symons's, we shall commence on Monday—lode 2 ft. wide: it will produce some good ore, which shall be valued in the next report.—Wm. Symons: April 17.

UNITED HILLS.—In the 80 fm. level, eastern end, lode 4 ft. wide, worth 25*l.* per fm.; in the 80, west of cross-cut, lode 2 ft. wide, worth 14*l.* per fm. In the 70 fm. level, eastern end, the lode 2½ ft. wide, worth 8*l.* per fm., nothing done during the past week in the eastern shaft, in consequence of the water. In the 60 fm. level we are not driving; in the shallow adit the lode is 4 ft. wide, worth 7*l.* per fm. At Wheal Charles, in the 50 fm. level, nothing has been done in consequence of the water; the men have been engaged in Turton's shaft, fixing new work, &c. In the 40 fm. level end, the lode is 2 ft. wide, worth 8*l.* per fm.; the lode in the winze is 3 ft. wide, worth 10*l.* per fm.; in the stopes, the lode is 2½ ft. wide, worth 14*l.* per fm. At Wheal Sparrow, in the 40 fm. level, eastern end, the lode is 2 ft. wide, worth 8*l.* per fm.; in the western end, the lode is 2½ ft. wide, worth 6*l.* per fm. In the 30 fm. level, the lode is 7 ft. wide, worth 23*l.* per fm. In the 20 fm. level we are not driving; in the adit level, the lode is 1 ft. wide, producing some stones of ore.—T. Trevennen; R. Williams: April 20.

WEST WHEAL JEWEL.—In the 115 fm. level east, on Wheal Jewel lode, the lode is 2 ft. wide—the further this level is extended east, the more promising it is looking for ore. In the 100 fm. level west, on the same lode, the lode is 9 in. wide, worth 4*l.* per fm. In the 70 fm. level west, on the same lode, the lode is worth 5*l.* per fm.; no lode taken down in any of the winzes on this lode in the past week. In the 12 fm. level, of Quarry shaft, on Tolcarne tin lode, the lode is 18 in. wide, worth 12 per fm. In the 30 fm. level, west of Quarry shaft, on the same lode, the lode is 18 in. wide, worth 6*l.* per fm. In the winze, in the bottom of the 12 fm. level, on the same lode, the lode is worth 18*l.* per fm.; in the stopes, east of Quarry shaft, in the bottom of this level, on the same lode, the lode is 15 in. wide, worth 12*l.* per fm.; in the stopes, east of Pryor's winze, in the bottom of the adit, on the same lode, the lode is worth 15*l.* per fm.; in the 12 fm. level, west of old sump-shaft, on the same lode, the lode is 15 in. wide, worth 8*l.* per fm.; in the 12 fm. level, east of Rowe's winze, on the same lode, the lode is 8 in. wide, worth 6*l.* per fm; in the adit end, west of Quarry shaft, on the same lode, the lode is 1 ft. wide, worth 20*l.* per fm.—Richard Johns: April 19.

WEST WHEAL MARIA.—The lode in the eastern engine-shaft is about 6 ft. wide, producing good stones of copper ore, and ground favourable for sinking; the lode in the western engine-shaft is about 2 ft. wide, producing spots of ore in places. In the 54 fm. level, east of this shaft, the lode is about 2½ ft. wide, composed principally of mundic and spar, with occasionally spots of ore; in the cross-cut south, in this level, there is no important alteration.—T. Rodda: April 20.

WEST SHEPHERDS.—Our mine presents much the same prospects as reported last week.—D. Skewes; T. Hooper: April 21.

WHEAL ADAMS.—The 60 fm. level, driving south, is much the same as last reported; there has been but very little done in it this last week, in consequence of changing the lift at the bottom; we are again drawing out the water as fast as we can. The rise in the back of the 50 fm. level, on the western lode, is worth about 8*l.* per fm. The 40 fm. level, driving south on the western lode, is poor at present. The 28 fm. cross-cut is still in the hard elvan. The tribute pitches, on the whole, are very much the same as last week. I have had orders from Mr. Beater to-day, to ship the ore to-morrow—that is, the 49 tons that were last sold; we are going to weigh it to-morrow morning, and ship it on Thursday morning.—T. Moyle: April 20.

WHEAL ANDERTON.—The lode in the 50 fm. level east is very regular, with the north and south wall discovered, above 5 ft. wide; the tin part has apparently mastered the copper, and would appear to be the predominant mineral; its underlay either way is scarcely worth noticing, being nearly perpendicular, which I conceive is a good omen, clearly showing the lode to be strong in going down. The lode in the 60 east is not yet cut to the east of the cross-course, I expect there are two fathoms further to drive on the course we are now operating on—this, however, will depend on the underlay, as regards a few feet; the lode in the 60 west is 4 ft. big, very regular, with branches, and occasional stones of tin of superior quality; in stoping the end of the shaft, between the 60 and 50 fm. levels, the lode is from 8 to 9 ft. wide, all good work, the leader part being very rich as to quality. In the 50 fm. level west, lode 3 ft. wide, good work; in the back of the 50 fm. level, the tributers are getting good wages at 6s. 6d. in the 1*l.*—therefore, the prospects of the mine hold out every encouragement of its becoming one of the best speculations in the country, when the workings shall have been further extended. I have sampled, and sent off upwards of 2 tons of tin ore, at 49*l.* per ton, and intend sending off a similar quantity next week, which is nearly ready, and am preparing more to follow immediately.—J. Carpenter: April 19.——The lode in the 50 fm. level east is improving in quality, near 6 ft. wide; ditto, west, much better than last reported, and larger. I have set a pitch in the back of the 60 fm. level, at 6s. in the 1*l.* The lode west of shaft, in the 60 fm. level, is 50 feet wide, producing fine specimens of tin ore, of superior quality. I think we are nearing the flookan of the lode east of the cross-courses in the 60 fm. level. Our dressing operations, as well as other surface work, are progressing regularly, and we shall send samples off next week for the sale of tin and copper ore.—J. Carpenter: April 21.

WHEAL EMMA.—The ground in the engine-shaft is somewhat improved for sinking since my last—the depth of shaft below the 22 fm. level, is 6 fms. 1 ft.; in the end, driving east, the north lode is about 3 ft. wide, composed of capel, spar, and mundic. In the adit level, at Brook-wood, on the south lode, the lode is about 2 ft. 6 in. wide, composed of spar, gossan, prian, and mundic—a promising lode, and well worthy of trial. I should recommend to increase the number of men—that is, to put four miners to extend the level under the hill with all possible despatch.—H. Choake: April 21.——The operations are principally confined to the north lode, which has been driven on at the 22 fm. level, a cross-cut having been driven from the shaft, and which latter has been sunk 28 fms. from surface; 6½ fms. below the 22 fm. level, which is now driving east, being in about 10 fms. from the engine-shaft; the lode is here 4½ to 5 ft. big, with mundic, and spots of ore, but not saving work; the ground or strata is improving in depth, and of a more kindly nature; the shaft, however, is attended with extra cost, from the coming water, and set at 21*l.* per fm.; the men not being able to sink more than 2 to 2½ fms. per month, it is contemplated to sink the shaft a further depth of 11 to 12 fms., so as to intersect the north lode at that depth, and thus give the mine a fair trial, which, from the indications it presents at the more shallow levels, it is well deserving; the killas is found to change in going in depth, as being more favourable to, and indicative of ore, while the ground does not require timber in the north part of the mine of ore, while the ground does not require timber in the north part of the mine—the ends 60s. to 65s. per fm. On the south lode, which is at a distance of 13 fms., an adit level has been commenced driving at a distance of 150 fms. from the engine-shaft, and 14 fms. driven on the course of the lode, which is from 2½ to 3 ft. big, running nearly east and west, with an underlay south of 2½ ft. in a fathom, composed of mundic, peach, sugary spar, and some spots of ore, disseminated through the lode, but not saving work; the adit is driven at 28s. per fm. by two men, but I would strongly recommend the putting on of six men to get through the ground speedily, as they would then be able to drive some 15 fms. a month; the hanging wall is a kindly flookan, and country a soft killas, much more grey in its appearance than in the north ground; the present end, in the adit level, on the south lode, which is in about 14 fms., is from 4 to 5 fms. from surface; and without dialling or levelling the ground, I should think that from 12 to 14 fm. backs would be gained in driving on the adit 28 to 30 fms. The cost of sinking a drawing shaft would not exceed 70s. per fathom to the adit level, and hence the expense of driving 26 fms., say 35s. per fathom, would be 45*l.* 10s.—add thereto 12 fms. sinking shaft, 70s.=90*l.*, and air and drawing shaft, say 8 fms., 70s.=28*l.*; would make 163*l.* 10s., as the entire outlay to prove this portion of the mine to the extent mentioned. On sinking the shaft so as to take the lode at the 40 fm., it would be essential at this point to drive out a cross-cut to intersect the parallel lode, at a depth which would justify further expenditure or its abandonment, which latter, however, cannot be contemplated, from the appearances at present. It should be observed, that to carry on the two separate workings there is not sufficient power with the present water, more particularly on the summer while; the power at present available would put down a shaft on the south lode 50 fms., if confined to that part of the mine: the wheel at present employed is 24 feet diameter, 3 ft. 7 in. breast. It would be desirable to sink a shaft at (say) 24 fms. from mouth of adit, as before-mentioned. The cost attending the proposed worka, would not much exceed the sum named, inasmuch that there are 10 fms. of pumps at surface; it would, perhaps, be advisable to substitute wood rods for iron, as affording more power in the dry season, and being attended with less cost. The shaft going down on the south lode, to intersect the north lode at the 40, will require six to eight months. In conclusion, I have only to observe, that while the mine cannot be said to be productive, or yielding any results at the present moment, yet there are such encouraging prospects, that with an outlay of 500*l.* to 600*l.*, and an expenditure of time of 8 to 10 months, the results may justify such further expenditure, and at the same time fully warrant the sanguine expectations entertained by the agents, and those most interested in the prosecution of the mine.—Henry English.

WHEAL GRACE.—The engine-shaft is sunk 11 fms. west of Wheal Concord boundary, and the engine (22-in. cylinder, drawing and lifting) is expected to go to work next Saturday. Another whim shaft, which is the lower shaft, is down 14 fms. about 35 fms. from the boundary of Wheal Concord, and a level driven 25 fms. east at this point. The cost of ground for sinking will not, I understand, exceed 7*l.* to 8*l.* per fm.—so that they may run down speedily with the engine-shaft. As the operations have of late been confined to surface work, nothing can be said, beyond the prospects of the mine, at the time of the temporary suspension, until an engine was erected, which were considered highly promising; and as there are parallel lodes in the course of being proved in the adjoining mine, which are but a few fms. distant, underlaying north, and which will make in depth in the sett, sanguine expectations are entertained. Henry English: April 19.

WHEAL WALTER.—The workings at this mine have been suspended for the past few weeks, until a meeting of the adventurers should be held, and the course determined upon. It is quite clear, that the outlay expended on the sett can only be considered as preliminary—while little or nothing has been done to prove the lodes in depth; and the engine has been lying at surface the past six months, which, whether to be applied, or otherwise, must depend on the spirit and determination of the adventurers. The following may be considered as embracing the principal work done:—Driving adit level about 150 fms., which has cost, in labour and timber, about 500*l.*; sinking engine-shaft 30 fms. (labour cost, 7*l.* per fm.) 210*l.*; timbered from surface to the bottom at a cost of not less than 150*l.*; engine pit-work, and other materials, upwards of 400*l.*; count-house, smiths' shop, and other buildings, 50*l.*; driving cross-cut to intersect the lode, 70*l.*—making, altogether, 1380*l.*; besides whim-work, carriage, water charges, and other expenses, amounting to upwards of 20*l.* per month more. This will give some idea how little has been expended in proving the lodes. The 20 fm. level, on C lode, has been driven east 16 fms. from London shaft—lode 4 ft. wide, and is composed of soft spar, mundic, killas, and spots of yellow copper ore; west, 12 fms., lode 3½ ft. wide, much the same as the former. These two levels it would be prudent to drive, as the ground is likely to be more compact, and the lode productive in the rising ground. The 30 fm. level is driven 4 fms. west, and 7 fms. east; the lode in this level is not so large as the level above, but composed of the same nature. The adit level, on B lode, is driven 40 fms. home, against the cross-course; it might be desirable to sink a winze in the bottom of this level, where some lead was discovered in driving.—Henry English: April 17.

WHEAL CURTIS.—Our operations since I last wrote to you being principally limited to the erection of the engine and fitting-up machinery, I have not much information to communicate, beyond that the engine is mounted, the tubes attached, one boiler placed, the sheers and capstan erected, and the other different parts of the machinery on the point of completion. The flat-rods are being mounted, and the bobs fixed on the bob-stands; hence, we expect to be fully prepared in a few days to work the engine. All the shafts are timbered and ready for the reception of the pit work, and the adits cleared.—J. Fegan.

WHEAL TRELAWNEY.—The lode in the 42 fm. level south is 2½ ft. wide, and worth 28*l.* per fm.; in the same level north it is 2½ ft. wide, and worth 16*l.* per fm. The lode in the 32 fm. level is 1½ ft. wide, and worth 12*l.* per fm. The lode in the winze, sinking under the 22 fm. level north, is 3 ft. wide, and worth 16*l.* per fm. The stopes are all looking very well. Phillips's engine-shaft is sunk 2½ fms. under the 42 fm. level. Trelawney's shaft is sunk 6 fms. under the 22 fm. level. Vivian's shaft is sunk 11 fms. below the surface, in favourable ground. We sampled yesterday, a parcel of ores, computed 70 tons.—Peter Clymo, Jun.

WHEAL CONCORD.—It is with regret that I am unable to furnish so encouraging a report of the mine as I could wish, arising not from the poverty of the mine itself, but from the want of energy on the part of the adventurers in prosecuting it. The following is its present state, and the appearances which present themselves of promise—while it need hardly be said, without a different course be pursued, the sooner operations are suspended, or, in other words, the "bal knacked," the better. I should first state, that the parcel of ore in course of being sent away to Messrs. Mullins, will yield about 26 tons, while there is not *half a ton* of ore left in sight; and hence workings must be carried on in dead ground, in the fond hope of a discovery. That such may be fairly contemplated no doubt can exist, as the lode is bearing ground, and, in my opinion, only wants to be worked fairly to develope its mineral resources. It should be borne in mind that the ore raised heretofore has been from the shallow levels on one lode, while not one foot of ground has been sunk, and until very lately not a fathom of ground driven to intersect the parallel lodes; at the same time, that four times the force has been of late employed in raising ore as would have been deemed prudent by any practical man, such being the orders of the London adventurers—no workings, with the view of discovery, being prosecuted, and hence the arrival at that point which with miners is understood to be "stop." I will, however, proceed to give an idea of the present workings, and a proposed plan, which latter, however, I would by no means recommend being adopted, if that the adventurers are not prepared to do justice to the mine, which, in my opinion, well warrants the outlay of a further capital, and which I consider as essentially necessary, if that profitable returns be contemplated, such being the result of the want of active measures heretofore. The engine-shaft is down to the 50 fm. level, and a cross-cut (6 fms.) put out at the 36 fm. level, to take the lode; it might be a prudent course to sink a winze on the lode from the 50 fm. level, which is 11 fms. away from the lode, as such would prove the ground—this could be done at 4*l.* 10s. to 5*l.* per fm., and continue down if deemed desirable, while to sink the engine-shaft 10 fathoms, such would be attended with a cost of 20*l.* per fm. at least—and, consequently, occupy at least thrice the time which would be required in going down upon the lode; in addition to which it would be necessary to drive out a cross-cut 16 fms., which, at 10*l.* per fm. added to costs of sinking, and the time occupied, would, I think, at once determine the more economical course to be pursued, both as regards time and money. It is, however, only right to state that, assuming no ore ground broken, this would be attended with an expenditure of upwards of 1000*l.*, and occupy 8 to 10 months—so that it should be well deliberated upon, ere any instructions be given—the present monthly cost, with no ore raising or in sight, being about 300*l.* At present there are four men driving the 20 fm. level west; four men at the 28, in the same direction; and four at the 36; the six sumpmen are driving south at the 36 cross-cut, to intersect the south lode—cost, 4*l.* to 5*l.* per fm.; one lode has already been taken in the end, both underlaying north, and coming into the set in depth, the backs coming to the end, both underlaying north, and coming into the set in depth, the backs coming to surface in the adjoining land. It is intended to put on four men to drive east on the south lode already intersected, also four at the 20 fm. level east—making in all 32 men. In driving west towards Wheal Grace, two levels have been taken—the one 8 fms., and the other 14 fms.; the meadow, or western shaft, is 63 fms. east of Wheal Grace boundary, and has been sunk 15 fms. The 8 fm. level has been driven 30 fms. west, and 3 fms. east. The 14 fm. level has been driven 9 fms. west, being 21 fms. behind the shallow level. There is a cross-course about 5 fms. east of the meadow shaft. The engine is working fairly, and the crusher is in good order, but requiring ore. With capital and proper spirit of enterprise, there can be no doubt, in my opinion, of the value of the sett, and which is, moreover, demonstrated by the erection of an engine within some 30 or 40 fms. of the boundary, but without such, it would be advisable to stop all cost.—H. English.

FOREIGN MINES.

AUSTRALIAN MINING COMPANY.—By the arrival of the *Competitor*, we have the following reports from the Australian Mines:—*Adelaide, Dec. 7.*—The committee direct me to send you a copy of the monthly report received from the Reedy Creek, and the copy of the last report from Wheal Rothschild, and the neighbourhood, made by Messrs. Anstey and Hart; from both these documents you will see that we have good ground for hoping that our first shipment of ore will soon be made. For the future, a copy of the report from each mine will be forwarded to you monthly. In the south winze, below the 10 fm. level, some good ore has been raised lately, but it is not looking quite so rich at present; the lode is over 4 ft. wide, and the depth from grass is 16 fms.; in the north winze, below the 10 fm. level, some good stones of ore have been raised within the last few days—upon the whole, it is looking much better than heretofore; the ground in the cross-cut remains about the same as upon the last survey-day. At Anstey's lode, the lode is nearly 4 ft. wide in the end, and some good stones of ore have been taken out—strong greens run all through the lode. At Montefiore's lode, in the north end, the lode is split into three branches, carrying ore in each, but not solid—altogether the mine has been looking better since survey-day, than at any previous period.—B. Travers Solly.

At the board of the committee of management, the 8th Dec., 1846, Messrs. Anstey and Hart (the latter for Mr. Baker), report that they visited Wheal Rothschild on Thursday last, and inspected the various works. They found a shaft on section No. 1472, put down 6 fms., and a level driven 3 fms., which had cut a promising lode, with indications of copper—they ordered the shaft to be extended to 6 fms. further, price not to exceed 30s. or 40s. per fm. On section 1514, Wheal Rothschild, they found the lode cleared and looking promising—let the work at 3*l.* per ton, in full, for 14 days; the shaft upon the hill is sunk 3 fms., and the sinking ordered to be continued at 4*l.* per fm. Messrs. Anstey and Hart recommend that an efficient person be appointed to superintend the working at Wh. Rothschild.—The report was approved and confirmed.

ALTEN MINES.—The following is the estimated produce for February:—

Mines.	No. of men.	Tons ore.	Per ct.	Tons copper.
Raipas	26	70	6	4·20
United Mines	14	40	4	1·60
Old Mine	4	10	5	0·50
Ryper's	6	4	5	0·20
Mancur's	8	5	5	0·25
Cole's	8	6	4	0·33
Michell's	6	20	5	1·00
Quænvig	2	3	4	0·12
Total	74	160		8·19

Mining Report from the 22d Feb. to the 19th March.—Raipas.—The communication between Monk's shaft, and the workings in Labouchere's lode, has been completed, and by the end of this month, we hope to hole the same shaft with the 10 fm. level cross-cut, and immediately afterwards propose to commence driving a 10 fm. level easterly, on Labouchere's lode. This lode has lately been intersected by a schistose stratum to the eastward, which completely cut off the ore in that direction; in the bottom of the stopes it is equally good and favourable for excavating. Further exploratory workings on this lode must be deferred, until the new level be driven from Monk's shaft. Carr's lode, in the bottom of the stope, has been rather more promising, but is still irregular. The stope on the new lode, to the north-west of Labouchere's, continues promising, and yields a fair return of ore; the ground is, however, hard for working—and being some distance from the other workings, the air is rather foul; we shall ventilate this part of the mine as soon as possible. The great quantity of snow fallen, and the severe cold during this month, have prevented us from returning so much Raipas ore to the smelting-house as we expected, and it is only during spring tides, that we have sufficient open water for the vessel to come to the smelting-house quay. The quantity of the produce of this mine is less than has been expected—but now we have longer days, and we hope shortly to have better weather—more attention shall be paid to the ore-dressing department, with a view of increasing the per centages. By the end of this month, we shall have another cargo of best dredge ready for delivery.

United Mines.—The improvement, noted in my last report, is now pretty general throughout all the workings; with the exception of one of the old stopes in the east, where the ore is exhausted, and further operations for the present suspended, we expect the March produce will experience a still greater increase than that of last month.

Ryper's.—The stope on the new lode is now the only working at this mine, producing ore. We have commenced a level from the bottom of the sink, on the cross lode, for the purpose of proving an adjacent lode under the adit; should this lode, on being intersected, not contain sufficient ore to cover the expense of working, this part of the mine may be abandoned. In the summer, we hope to be able to employ the men with greater advantage on the numerous lodes and branches themselves, already discovered at the surface.

Mancur's is again poor; but the prospects in the new stopes, towards the south, are good, and the lode appears to improve in that direction. The workings are, however, in this part too confined to admit of our applying our forces with advantage; we are, therefore, at present merely opening ground for future stopes.

Michell's.—The shallow adit easterly is still promising, but less productive; the lode, however, appears again to be opening, and we may shortly expect an improvement; the roof stope, in the same level, is improved, and makes rather better returns. The prospects of this mine continue flattering.

Cole's.—The stopes yield fair returns of ore of somewhat better quality. The

difficulty of dressing and cobbing, mentioned in my last report, have this month been still greater, and the expense of clearing ice and snow from the mine and ore floor has been greatly augmented; in some places, we have been obliged to remove the snow to the depth of 10 to 12 ft. before the ore could be driven to the smelting-house. This lode appears to improve towards the south; but the appearance of the northern workings is not less favourable than before.

Old Mine.—The tributers continue to make fair returns, but not quite so good as last month; they, however, work with spirit, and we expect a favourable result from their labour.

Quarwig.—The heavy falls of snow have for the present compelled us to suspend operations here for a month or two. We have succeeded in bringing down the greater part of the produce to the sea-shore, and shall send the vessel to bring it to the smelting-house in a few days; this ore will appear on the next delivery note, when we hope to have returned the whole of this winter's available produce. The stocks of picking stuff, smalls, and halvans, which are not inconsiderable at all the mines, cannot be turned to account before the summer.—S. H. THOMAS.

LA POIPE ZINC AND LEAD MINES.—*Reventin-les-Vienne (Isère), April* 13.—This mine is situated near the town of Vienna, in the department of Isère, and on the south-eastern banks of the River Rhone, in a very fine climate, and pleasant country. The lode on which we are now working differs very little from north and south in its course; it runs through a strata composed of gneiss (a sort of killas), with granite and grovan intervemently; there is also a rise of granite close by the lode, a little down the mountain, from where our present workings are. The mine was worked 31 years since for lead—zinc was counted by them as nothing, although they left a good lode of it in the back of the adit level; in March, 1846, Mr. E. Duclos de Boussois took the mine, and opened it, and found the adit driven 100 fms. south on the course of the lode; the lode as far south as Turner's winze is 2 ft. wide, and worked in several places for lead; from the south of Turner's winze, in the back of the adit, the lode is 6 ft. wide, makes 6 tons of zinc ores, and about 5 cwts. of lead to a fm.; the pitch is working at 4*l.* 8s. per fm. Below the adit the mine is drained by a horse-engine, which works by day only, there not being a sufficient quantity of water to work by night; 45 fms. south from the mouth of the adit level is the engine-shaft, which is sunk 10 fms. below the 8 fm. level, on the course of the lode; the lode in the shaft, below the 8 fm. level, is 7 ft. wide, making 10 tons of zinc, and 10 cwts. of lead to a fm.; from the engine-shaft, 16 fms. north to a borer-hole in the 8 fm. level, the lode is 2½ ft. wide, poor, but not without mineral; from the borer-hole, 16 fms. north to the whim-shaft, in the back of the same level, the lode is 20 in. wide, making 3½ tons zinc to a fm.; the pitch is working at 1*l.* 12s. per fm. From the whim-shaft, 10 fms. north to the cross-course, the lode is from 20 in. to 2 ft. wide, making 3½ tons zinc, and about 6 cwts. of lead to a fm.; the pitch is working at 1*l.* 16s. per fm. From the cross-course, 16 fms. north to the present end, in the same back, the lode is so near the surface there is not much mineral in it. In the bottom, under the 8 fm. level, the lode is 1 ft. wide, making 3 tons of lead to a fm.; we think the lode north of the cross-course, is changed better for lead. From the whim-shaft, 10 fms. north to the cross-course, and 16 fms. south to the above-named borer-hole, in the bottom of the 8 fm. level, the lode is 2½ to 3 ft. wide—a very good lode; we consider it to turn out 5 tons of zinc ores to a fm.; there are also some very good stones of lead, which save out, and is beneficial to the mine. From the borer-hole, as far south as the engine-shaft, in the bottom of the 8 fm. level, the lode is 3 ft. wide, composed of gossan, quartz, and spots of lead and zinc; but, as there is a good lode in the engine-shaft, we consider to make a good bottom; in the pitch, in the back of the 8 fm. level, from the engine-shaft, as far south as Turner's winze, the lode is 5 ft. wide, and will make 1¼ tons lead to a fm.; in the bottom under the above pitch, the lode is 5 ft. wide, and will pay very well for working. From Turner's winze, as far south as Zoe's winze, in the back of the 8 fm. level, the lode is 5 ft. wide, poor; from Zoe's winze, as far south as the present end, which is about 15 fms., the lode is 6½ ft., and will pay very well for working. From Turner's winze, as far south as the present end, in the bottom of the 8 fm. level, the lode is 5 ft. wide—a good lode for zinc and lead, and a very kindly bottom. The River Rhone is 50 fms. below our bottom level, where an adit might be brought up to the mine at that depth, in a beautiful channel of ground, as great part of it would be driven on the course of the lode, which offers a most encouraging adventure—it is also tolerably cheap ground for driving. At present there is on the mine a steam-crushing machine, which works well, and all other dressing machinery requisite for dressing the ores. The mine and smelting-works are so near that it is very cheap carriage; coal is 12s. per ton; we have also a mine office, smith's shop, carpenter's shop, magazine for stores, and a railway to bring the stuff out of the mine. The mine underground has been worked on just the same plan as our mines in Cornwall—in fact, the mine has been spiritedly and orderly worked; and, although now in her infancy, is returning about 2 tons of lead ores daily, which is sold to the potteries for 20*l.* per ton; also from 5 to 6 tons of jack daily, which produce one-third of its weight of zinc in ingots, equal in quality to any in the market, either Belgian or Silesian. The present cost of the mine and foundry per day is about 24*l.* This is the report of us, the undersigned Cornish miners, who have been working in the mine these 10 months' past.—W. OLIVER, W. BURROWS, H. GRAY, J. WASLEY, FRANCIS GRAY, and W. GRAY.

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

BIRCH TOR.—The pitches are looking very well, and the returns will be about 9 tons per month for the next few months; and if the ground continue to open as it now is, we shall then increase. The Vitifer deep adit is still getting on slow; we expect to see the lode, at all events, before Midsummer.

EAST RELISTIAN, it appears, is likely to become a valuable mine. Though the lode has only been opened below the adit during the last five or six months, a considerable quantity of ore ground has been discovered. The lode in the 12 fm. level west is worth from 10*l.* to 12*l.* per fm.; and a pitch is being wrought above this level, in which the tributers are getting excellent wages at 6s. in the 1*l.* The lode in the 6 fm. level east is worth from 12*l.* to 15*l.* per fm.—under which the 12 fm. level will be driven in course of a fortnight; 25 tons of copper ores will be sold on the 22d inst.; and, in course of four weeks, 20 tons more will be made ready for sale. The ores throughout the mine are of rich quality; some samples make a produce of 23¾.

EXMOOR WHEAL ELIZA.—In consequence of the severity of the weather and our exposed situation, we have been considerably delayed, so much that our water-wheel will not go to work before the first week in May, when we shall immediately commence sinking the engine-shaft, and we expect very soon after to see a course of ore, as our shaft will go down on course of the lode. The appearances of the lode fully warrant this assumption, there being a very considerable quantity of ore in the gossan.

WEST UNITED HILLS.—It is intended to erect a powerful steam-engine on this mine shortly. The meeting, which was intended to have taken place on the 12th, is put off; but no day is yet fixed. There is a branch of ore in the bottom of the level at this time, 1 ft. 6 in. wide, worth 6*l.* per ton.

WHEAL ASH.—It is evident we are approaching the lode in the adit, for the ground is very much altered, and there is a great deal more water. The water is also much increasing in the north cross-cut from the engine-shaft, which induces me to think we are close on the lode here also.

ACCIDENTS.

New Docks Quarry, Ryhope.—T. Wilson was killed by a stone from a blast.

Morriston.—J. Griffiths was killed in the Swansea Coal Company's Works.

Bury.—E. Taylor was killed by an explosion in the Bank Top Colliery.

Hodge Clough Colliery, Oldham.—As A. Walsh and W. Potts were ascending from their work in a tub, the pit of which is about 200 yards in depth, the engineer (through carelessness) suffered them to be wound over the pulleys of the head-stocks of the pit, when Walsh fell out of the tub, and was killed on the spot; the other man, it was stated, was so injured that there are but little hopes of his recovery. The engineer is in custody to await the inquest.

West Bromwich.—J. Pearson was killed by a fall of coal at Messrs. Williams's.

Holloway Bank, Crook Hay.—A. Holland was killed by a fall of coal.

Gannant Colliery, Cwm Ammon, Carmarthenshire.—W. Thomas was killed, and several companions more or less injured, by an explosion of fire-damp.

Rough Hay, Darlaston.—R. Bestwick was killed by an explosion caused by a lighted candle he was carrying coming in contact with a quantity of sulphur, which had accumulated in a sump for holding water.

Oldbury.—J. Holland was killed by a fall of stone in Mr. Darby's pit, Tividale.

Blower's Green Colliery, near Dudley.—W. Smith was killed by a fall of coal.

South Shields.—R. Heslop, deputy overman, was killed by a fall of stones at the St. Hilda pit.

Plymouth Works, Merthyr.—H. Davies, while working in the new rail mill, fell back, and was caught by a shear-wheel, when he was crushed to death.—As T. Rees was filling one of the furnaces, he overbalanced himself, while stooping forward, and fell into the burning mass—his fellow-workmen instantly endeavoured to extricate him from his dreadful situation; once they brought him up to the edge of the furnace, when he fell back again; the second effort, however, was successful, and they got him out alive, but his clothes were entirely consumed, and his person frightfully burned, so that the hardy workmen could scarcely look on the shocking spectacle his scorched and lacerated body presented. He was immediately conveyed home, and received all the aid that surgical skill could render, but all was vain; he lingered in the most excruciating sufferings till the next morning, when he expired.—Another serious accident also occurred by the explosion of fire-damp, when two men and a boy were seriously injured; one of the men is in a very precarious state.

The extensive chemical works at Heworth, near Gateshead, were sold by auction, at the George Inn, Newcastle, one day last week, for 16,000*l.*, to Joseph Coulthard, Esq., who is connected with the firm of Cookson and Coulthard, proprietors of the bottle work at Bill Quay.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

TUESDAY.....Wheal Concord Mining Company—office, at Two.
WEDNESDAY...Dutch-Rhenish Railway—offices, at Twelve.
THURSDAY.....Equitable Assurance Company—offices, at Eleven.
FRIDAY.....Tincroft Mining Company—offices, at Two.
East of Scotland Malleable Iron Company—Hutton's Inn, Dunfermline, Scotland, at Twelve.

PATENT GALVANISED IRON COMPANY.

The adjourned special general meeting of this company was held on Tuesday last, at the London Tavern, when the resolutions passed at the previous special general meeting, on the 18th inst. [see last Journal], were unanimously confirmed; and there being no other business before the meeting, it was adjourned.

LLYNVI IRON COMPANY.

A general meeting of the proprietors of this company was held at their offices, Moorgate-street, on the 21st inst., when it was unanimously resolved, that each share of 250*l.* be divided into five shares of 50*l.*, in conformity with their Act of Parliament.—Dr. BOWRING, M.P. (the chairman of the company), presided.

BLAENAVON IRON AND COAL COMPANY.

The annual meeting of this company was held at the offices, Bucklersbury, yesterday. R. W. KENNARD, Esq., in the chair.

There was a report read, which appeared to be, on the whole, very satisfactory—the net profit on the year's operations having been 28,269*l.* 17s. 10d.; and, by a resolution of a previous meeting, all the losses of former years, with the preliminary expenses and the dead accounts, had been expunged. A dividend of 1*l.* per share had been paid in February, and it appeared to be the opinion of the shareholders, that the directors would be justified in paying another in the autumn; but the subject was left to their discretion.—The report was adopted, and a vote of thanks was passed to Mr. Johnson (the manager), also to Mr. Hill and to Mr. West (members of the local committee in Wales).—A vote of thanks was also passed unanimously to the chairman and directors of the company, when the meeting adjourned.

TRETOIL MINING COMPANY.

A meeting of shareholders was held at the offices, George-yard, Lombard-street, yesterday, to consider the expediency of continuing the further proceedings of the company.—Mr. R. THOMAS presided. The report of Capt. Williams, after describing the operations which had been conducted in the works since the last meeting, stated, that in his judgment, it did not appear that any favourable result was to be expected. Their anticipations, with regard to the productiveness of the mine, had not been answered; and there remained little chance of the mine becoming profitable, unless sunk at least 100 fms. below adit, which was about 22 fms.—After some discussion, a resolution was proposed by Mr. LEA, and seconded by Mr. HEALES, to the effect, that the cross-cut at the 40 fm. level, be driven on until the time of the next setting day—viz., the 7th of May; and, in case of no further discovery being made by that time, that Capt. Williams should proceed immediately to draw up the materials, and that steps should be then taken for their sale. This resolution was agreed to unanimously. Mr. H. THOMAS (the secretary), stated, as the result of a rough estimate which he had made of the financial affairs of the company, that, according to present appearances, there would be between 500*l.* and 600*l.* to divide amongst the shareholders.

EAST COOMBE MINING COMPANY.

A meeting of adventurers was held at the Fortescue Arms, Barnstaple, on Thursday, the 15th of April.—Capt. JAMES CARPENTER in the chair.

The circular convening the meeting having been read, the CHAIRMAN proceeded to state the present position of the mine, and the more particular objects for which the adventurers had assembled—it being desirable that measures should be adopted to prosecute it with energy, by the application of further capital. The ore raised from the present levels, which were shallow, being highly encouraging, and, moreover, being rich for silver. He suggested that the committee should be re-elected; and as certain measures might be deemed desirable in the prosecution of the operations of the company, as regarded the extension of the sett, or the renewal of the present lease, which had less than two years to run, it might be desirable to add to the number.—A resolution to such effect having been put, a committee of seven was appointed.—The CHAIRMAN observed that, under the peculiar position in which the company was placed, it was held desirable to invite Mr. English to meet them, who had visited the mine, and would, doubtless, have much pleasure in giving them his opinion, not only of the prospects which it presented, but would also discuss with them the several measures proposed—while he felt it only right to observe, that he thought it would be prudent to leave with the committee that day appointed, and to their purser—Mr. Chowan, who held nearly four-fifths, —to make the arrangements with the lessors.

Mr. ENGLISH proceeded to give a report on the state and prospects of the mine, which will be found embodied in the following report:—

"*East Coombe, April* 15.—The several workings hold out good prospects, if prosecuted; but the limited extent which the lease has to run would not, in my opinion, warrant any outlay, such as I should be disposed to recommend, until arrangements are entered into with the lessors—so as to secure an extension of the lease, and which would alone warrant the outlay necessary to work the mine effectually. As regards the surface, the works seem well laid out; the wheel does its work fairly, and, with an expenditure of some 15*l.* or 20*l.*, might be made far more effectual, by bringing in the water at a higher level. The engine-shaft has been sunk 20 fms. below the adit level, which is at the point 7 fms. from surface—making the entire depth 27 fms. A cross-cut is in course of driving at the 10 fm. level to take the north lode, which is about 5 fms. forward from the end, and a pare has been lately put on to costean, with the view of discovering the south lode—so as to be enabled to judge of the propriety of driving out south in the 20 fm. level. There can be no question but that the engine-shaft should be put down another 10 fm. lift, and cross-cuts driven, so as to take the north and south parallel lodes, and the levels at the 20 and 30 extended on the middle, or main, lode; but this would and must depend on the acquirement of an extension of the lease, as it would involve an outlay of 800*l.* to 1000*l.*, and occupy 10 or 12 months in its prosecution. The ore raised, and now in course of dressing, is found on assay to yield 20 to 30 ounces of silver to the ton. In sinking the shaft, if continued 20 fms. from its present bottom, it might be calculated upon taking the lode, which would give the mine a fair trial; while the power of the wheel, 36-ft. diam., with 4-ft. breast, is calculated to put it down far below that depth. The strata of the country is limestone with killas, bordering on, or immediately riding, the former, and in which the lodes run. Upon viewing the mine, and taking into consideration the opinions expressed relative thereto by Capt. Carpenter, and other practical miners, I have no hesitation in saying, that it is well deserving a further outlay, in carrying out the present workings; but that such must necessarily depend on the extension of the grant.

An animated discussion took place with reference to a renewal of the lease, and an accession to the sett; a resolution having been previously passed, confining the number of men employed to four, until satisfactory arrangements were entered into, when a vote of thanks having been given to the committee for their past labours, and to the chairman, the meeting separated.

GREAT WHEAL MARTHA.—A second special meeting of the proprietors was held at the office, Old Broad-street, on Tuesday, to consider and determine on the steps to be taken for prosecuting the works of the mines, and raising the requisite funds for such purpose, either by the creation of new shares, or in such way as the meeting may determine; and also to consider and determine on the option to be given to the present shareholders, either to retire or to continue their interest in the company. The plan proposed by the directors, was unanimously agreed to at the special meeting held on the 5th inst.; and this second meeting was necessary to confirm, or otherwise, the resolutions then come to. The circular calling the meeting, and the minutes of the previous one, having been read, and the latter confirmed, after a few satisfactory observations from the CHAIRMAN (John Brightman, Esq.), the plan for raising new capital, by issuing 1000 new shares, of 3*l.* each, was unanimously adopted.—It was stated by the CHAIRMAN, that many of the shareholders had applied for a great many more new shares than they were entitled to, as their *pro rata* from the number they held of the old shares, and that they would have no difficulty in placing double the number they were to issue.

PERRANZABULOE.—A meeting of parties interested in the formation of a company for working this mine, was held at Anderton's Hotel, Fleet-street, on Thursday last. Capt. Chynoweth attended, with a report he had prepared on the state and prospects of the sett—from which it appeared that the mine had a beneficial outlay of capital to the extent of 18,000*l.*, by which the riches of the mine were established, and its returns increased from 7 to 50 tons per month at the time of its suspension, which was ascribable to disputes, and the low price of lead in particular. To form the new company, it was proposed to divide the mine into 512 shares, and it was calculated that the capital required to set the mine into operation would be about 5000*l.* The average produce of the ores was about 72½ per cent. for lead, and 24 ounces of silver per ton, which, at the present price of pig lead, would make, at a public sale, 15*l.* per ton. After some discussion, it was agreed to establish the company, and that measures be forthwith taken for that purpose.—About two-thirds of the shares were subscribed for in the room, and applications for others have since been received by the secretary.—We have seen letters from practical men well acquainted with the neighbourhood, which represent the Perranzabuloe Mine as one holding out good promise of proving a profitable speculation.

RUSSELL CONSOLS.—A meeting of adventurers was held at Tavistock, on Wednesday, the 14th inst.—JOHN RUNDLE, Esq., in the chair.—The accounts were produced from the commencement to the end of Feb., showing balance due from adventurers of 153*l.* 1s. The captains' report having been read, it was resolved, that the horse-engine therein recommended be immediately put up, and also the other recommendations contained in the report carried into immediate effect. A call of 1*l.* per share was made. The following report, from Capts. A. Barratt and J. Phillips, was read to the meeting:—In handing you our report of this concern, we would first solicit your attention to the lode named Richards', near the Tamar; the operations on which have been confined, in consequence of the water being too powerful to be kept under control by manual labour in a shaft sunk about 9 fms., and level (about 7 fms. deep) driven on the course of the lode for about 10 or 12 fms., and which has yielded a few tons of good ore, and presents such favourable indications as are seldom to be met with at a similar depth. There is a very promising cross-course in the eastern end, which enhances the value of this lode very considerably, if prospectively considered. It is now proposed to erect an engine to be worked by horses, to prove the lode 10 fms. deeper, which will enable us to arrive at a more correct decision as to the character and prospects of the lode, before a more expensive trial is proceeded with. The next point to which we would draw your attention, is the Impham cross-course, the back of which has been opened on by costeaning for many fathoms. In all the costeaning pits, gossan of the most promising description, with spots of lead, has been found, quite sufficient to warrant our recommending the cross-course to be sholed on from the north to the south boundary of the sett; this cross-course is supposed to be one the Tamar lead lodes, and, by adopting the course we have proposed, we shall be able to decide on the most promising place for commencing operations. The cross-course presents features which justify our entertaining very sanguine hopes as to its profitable results, if worked to some extent. The last point of operation to which we would direct your attention, is the lode on which we have been clearing up shafts, &c., for some time past. Our attention was first drawn to this lode, by finding old workings on the backs for a great distance, and good stones of ore and gossan in the burrows thrown up from them. We then commenced clearing a shaft about 7 fms. south of the old workings, which we expected to find had cut the lode in sinking; however, after clearing 19 fms., we found a cross-cut extended south from 6 to 7 fms., and there communicated with an adit level by a sink, nearly 2 fms. deep. The adit was too full of water to allow our making any satisfactory examination of the lode laid open in the back, or the extent of the drivage; we, however, at great inconvenience, broke some stones of ore and gossan from the lode in the back of the level. Our men are now employed clearing the adit, to enable us to examine it from end to end, to see if there is any cross-cut driven north, as we are of opinion, from the appearances at the surface, that there is a lode further north. The highly mineralised character of the burrows, the congeniality of the strata, and the extent of the old men's workings, lead us to believe that the lode will be found (where left off by the old miners) to be a very promising, if not a valuable one. There are many other lodes in the sett well worthy of attention, but the different points brought under notice are those which we would recommend operating on for the present. A powerful water-wheel can be erected in Impham Valley, to be worked by water from the Tavistock Canal, which could be applied without much difficulty, to all or either of the lodes now under consideration.

STRAY PARK AND CAMBORNE VEAN.—A general meeting of adventurers was held at the mines, on Friday, the 16th inst., at which the accounts for Jan. and Feb. were produced, showing:—

Tutwork cost in January and February		£973	19 9
Merchants' bills in January and February		328	12 6
Tribute pay on ores, sold 4th February	£332 1 9		
Substat advanced on ditto	366 4 7		
Lords' dues payable on ditto	103 3 2	801	9 6
Balance		1498	7 11
Total		£3602	9 8
Balance in hand		£ 570	10 3
Copper ores sold, 524 tons 11 cwts. 2 qrs.		2475	16 2
Old materials, 550*l.*; tinstuff, 6*l.* 3s. 3d.		556	3 3
Total		£3602	9 8

There was a further sale of ore, on the 1st April, producing 3373*l.* 2s., making total balance in hand 4871*l.* 9s. 11d.

The accounts were agreed to, and a dividend of 1*l.* per share declared.—Mr. MARRIOTT having stated to this meeting, that he will be satisfied if the adventurers in Stray Park and Camborne Vean Mines will explain so much of their last resolution, passed at the meeting on the 12th Feb., as to declare that no reflection was intended by them towards Lady Basset, Mr. Marriott, or any of Lady Basset's present agents, it was resolved, that such an explanation be, and is hereby made, and that the conditions offered by Lady Basset, for granting Wheal Francis sett, be, and are hereby, finally accepted. It was also resolved, that Mr. Vawdrey meet Mr. Marriott at an early period on Wheal Francis Mine, for the purpose of settling matters relative to the limits of the sett, the protection of the present tenants thereon, together with all points that may arise in reference to the terms proposed in the lease.—The following report, from Capts. R. Eustice and E. Ralph, was read to the meeting:—In the 60 end, driving west, the lode is 1 ft. wide, yielding 1 ton of ore per fm., worth 6*l.* per ton; in the 70 fm. level, about 3 fms. west of the 60 end, there is a rise gone up in the back 9 fms., through a lode averaging 2 ft. wide, yielding 3 tons of ore per fm., worth 7*l.* per ton. In the 70 end, driving west, the lode is 2½ ft. wide, yielding 4 tons of ore per fm., worth 7*l.* 10s. per ton. In the 80 end, driving west, the lode is 15 in. wide, yielding 2½ tons of ore per fm., worth 7*l.* per ton. In the 90 end, driving west, the lode at the present time is small, yielding stones of ore; in the rise, above the back of the 90 fm. level, the lode is 1 ft. wide, yielding 1 ton of ore per fm., worth 6*l.* per ton. In the 100 end, driving west, the lode is 2 ft. wide, yielding 4 tons of ore per fm., worth 6*l.* per ton. In the 110 end, driving west, the lode is 18 in. wide, yielding 2 tons of ore per fm., worth 5*l.* per ton; in the winze sinking below the 110 fm. level the lode is 18 in. wide, yielding 2 tons of ore per fm., worth 5*l.* per ton; in the 120 end, driving west, the lode is 1 ft. wide, yielding 1 ton of ore per fm., worth 6*l.* per ton. In the 124 end, driving west on Stray Park main lode, the lode is small, containing stones of ore. In the 130 end, driving east, the lode is 15 in. wide, yielding 2 tons of ore per fm., worth 6*l.* per ton. In the 150 end, driving east, the lode is 3 ft. wide, yielding 2 tons of ore per fm., worth 6*l.* per ton; in the 150 end, driving west, the lode is 1 ft. wide, yielding 1 ton of ore per fm., worth 6*l.* per ton; in the 150 end, driving west on south part of the lode, the lode is 2 ft. wide, yielding 2 tons of ore per fm., worth 6*l.* per fm. In the 150 cross-cut, driving south, the ground is favourable, price 6*l.* 10s. per fm.; in the 180 we are driving a cross-cut south, to intersect the main part of the lode, which is not yet seen in this level, but which we hope to meet with in a few fms. further driving. The tribute ground is looking exceedingly well, and the mine altogether is in a most gratifying state of working.

ST. AUSTELL CONSOLS.—A special general meeting of shareholders was held at the New Inn, Tywardreath, on Friday, the 9th inst.,—W. DAVIS, Esq., in the chair. The accounts for the four months, ending February, amounting to 224*l.* 12s. 3d., were allowed and passed, and the balance, 86*l.* 3s. 5d., carried to the debit of next account.—The report of the agents having been read, a call of 1*l.* per share was made, for the further prosecution of the mine. A list of defaulters having been read, it was resolved that, unless all calls were paid up in 14 days, the purser should institute proceedings in the Vice-Warden's Court, against the re-opening of the said court on the 1st of May next, for the Vice-Warden's order for the sale of the defaulters' shares, pursuant to the Stannary Courts Act of 6 and 7 William IV., cap. 106; that as it appears from the agents' report we are in daily expectation of cutting two lodes, it will be advisable for the agents to discontinue working on any lode as soon as cut, in order that the defaulters may not be enabled to speculate on their co-adventurers' capital, but that their shares may be brought to the hammer while saleable, and before the character of the lodes in question be proved; and, that with a view of giving confidence to distant adventurers, a copy in detail of the accounts this day passed, be sent to any adventurer on the receipt by the purser of a post-office order for 7s., to defray the expense of a clerk to copy the same, including paper and free transmission.—The following report, from Capts. J. Sampson, and N. Tredinnick, was read to the meeting:—Since our report to you on the 31st Dec. last, our operations have been principally confined to driving our north and south cross-cuts to intersect Williams' and the Wheal Hawkins lodes. We have extended the north cross-cut 22 fms., and are in daily expectation of cutting the lode. We have also extended our south cross-cut 84 fms., and in that distance have driven through an elvan course 7 fms. wide, and are in expectation here also of cutting the lode daily. We are still driving west on the Goffin lode—the lode continues its favourable appearance, producing good stones of ore; our main object, in driving this level west, is to get back under a very large and promising gossan. We have lately set a pitch on tribute at 13s. 4d. in the 1*l.*, and the men are getting fair wages. We are now on the point of accomplishing the objects for which the mine was commenced, and our good opinion as to the ultimate success of the speculation is undiminished.

WHEAL BLENCOWE.—At a meeting of the adventurers held at the mine, on Tuesday, the 13th inst., the accounts for Nov., Dec., Jan., and Feb., were presented, showing balance due purser 926*l.* 2s. 5d., which, having been examined, were passed, and a call of 3*l.* 16s. 6d. made to pay off the same. The sale of tin, Dec. 4, produced 92*l.* 10s. 7d., and on Feb. 3, 112*l.* 13s. 11d. The following report from Capt. W. Pease was read to the meeting:—I stated in my circular to the adventurers, in December last, that as the underground operations would have to be suspended for a time, to allow of the pit-work to be fixed, the returns of tin for the next month or two would necessarily be interfered with. That, however, was not the only thing which has retarded our operations: unfortunately, in the beginning of January, we met with a serious accident, no less than the falling in of one side of the Wheal pit; which accident put a stop for a time to all underground work, and occasioned considerable expense; and although, since the accident, every exertion has been made to get the large lift fixed, and the pit-work completed, it has been only recently accomplished. This will be sufficient to explain why the cost, &c. has been so heavy, and the returns of tin so small. Now, however, I have the satisfaction to state, that every thing seems to be going on favourably. The wheel works admirably; the north and south lode is upwards of 4 ft. big in the present end of the 10 fm. level; the east and west lode, recently discovered, fully maintains its character, and the agent's report as to the general appearance of the mine, is most satisfactory. As you will perceive that the call made is only to meet the division of cost actually incurred up to the end of February last, I have to request, that you will remit immediately, to my credit at the Devon and Cornwall Bank, St. Austell, the amount due from you as under, in respect of the shares which you hold.

WHEAL WALTER.—A meeting of adventurers was held at the offices, King-street, Cheapside, on Thursday last, the 22d April—PETER DAVEY, Esq., in the chair.—Mr. W. SNELL attended as the representative of the purser (Walter Weekes, Esq.), and consulted as to the best mode to be adopted to liquidate the debts now due from the adventurers, and on other matters as regards the future working of the mine.—The notice convening the meeting having been read, and a statement submitted of the present state of the mine and its financial affairs, a conversation ensued, as to the more prudent course to be adopted, with the view of either prosecuting the operations, or at once abandoning the mine.—The CHAIRMAN, and other adventurers present, observed, that having expended so much money on the mine, that it was, in their opinion, highly desirable to carry out certain plans recommended by the mining captain, and which would involve a comparative small cost; and, at the same time, prove the mine more effectually than had heretofore been done. It was not, however, contemplated to erect the engine at the present moment. It was subsequently moved, that as a question might arise as to the legality or regularity of the last call of 10s. per share having been made by the committee, and not by the purser, that the same be rescinded, and in lieu thereof, that a call be made of 15s. per share; the parties having paid the call referred to, being credited for such amount, which motion was agreed to. It appeared, from the explanations afforded by the secretary, and on reference to the accounts, that on payment of the call of 15s. per share, there would be one-sixth that amount, or about 125*l.*, applicable to the further prosecution of the mine. A question we understood to be agitated, whether in case the majority or body of adventurers should determine on suspending the mine, then if the mine (of course minus the machinery and materials) would fall into the hands of the lessors in their private character, although acting as representatives of the company. On this we believe no one offered a *decided* opinion.—Thanks having been voted to the chairman, the meeting adjourned.

CALLESTICK MOORS.—At a meeting of adventurerss, held at Farquharson's Hotel, Truro, on Tuesday last, the accounts for the past three months were allowed, as follows, and a call of 2*l.* per share made for liquidating the balance, and for the further prosecution of the mine:—To balance due to purser, Dec. 31, 1846, 397*l.* 10s. 8d.; costs and merchants' bills for Jan., Feb., and March, 1103*l.* 13s. 5d.=1501*l.* 4s. 1d. By balance due to purser at last meeting (exclusive of arrears) divided, 282*l.* 10s. 8d.; call of 2*l.* per share (less arrears), 490*l.* 5s. 5d.; arrears on former calls received since last meeting, 95*l.*; ores sold (less dues), 164*l.* 4s. 8d.=1032*l.* 9d.: balance due to purser, 469*l.* 3s. 4d.

EAST POOL.—The usual two-monthly meeting of adventurers in this mine took place on Tuesday last, when the following accounts were passed:—By balance at last account, 27*l.* 4s. 11d.; ores sold (less dues), 862*l.* 3s. 8d.=889*l.* 8s. 7d.—To costs and merchants' bills for Feb. and March, 743*l.* 14s. 6d.: leaving balance, 145*l.* 14s. 1d.

WHEAL SKTON.—At a two-monthly meeting, held at the account-house, on the 13th inst., the accounts were passed, showing total cost at 3018*l.* 19s. 2d.; and receipts, 5000*l.* 18s. 5d.—leaving 1981*l.* 14s. 3d., which, with balance due from purser, made a total available sum of 4016*l.* 2s., from which a dividend of 20*l.* per 99th share was declared.—We shall give the particulars in our next.

MINING IN SOUTH AUSTRALIA.

REPORT ON THE VARIOUS MINERAL PROPERTIES OF SOUTH AUSTRALIA.

[FROM A CORRESPONDENT.]

BURRA BURRA.—This is one-half of what is called the "Burra Creek Special Survey," of 20,000 acres, and belongs to the South Australian Association, formed here, and comprised of 2464 shares—cost 12,320*l.*, or 5*l.* each. This valuable copper district is situated about 96 miles from Adelaide, and has proved to be the greatest mineral deposit hitherto discovered in the colony. The preliminary workings were commenced under very unfavourable auspices, from the total want of professional, or practical, knowledge as regards mining operations; yet the quantity and quality of the ores extracted, during the first six months, give ample evidence, that, as an investment, its position, or real value, cannot be precisely ascertained or fully appreciated. The accompanying report, published by the directors (and audited), for the two half-years, which expired on the 30th Sept. last, will give full information of its state and prospects up to that date. Since then it has had a progressive improvement; and, as it is now perfectly defined, and established as a "master lode," it will, doubtless, prove an inexhaustible source of wealth to its proprietors. It would appear, from the inclosed statement, that the amount, cost of extraction, discounts and interests inclusive, machinery, buildings, smelting-works, tools, &c., during the year, and upon 7200 tons of ore—

Say, 5738 tons for the English market.... } 1462 tons retained for smelting here } has been	£27,355	2	4
To which add cartage upon 3011 tons, partly on the road and at the mine at 50s. per ton	7,527	10	0
Add also freight to Swansea upon 5738 tons, average rate, at 4*l.* per ton..	22,952	0	0
Total cost of 5738 tons placed in Swansea, } And 1462 tons smelting ores .... }	£57,834	12	4

The first shipments having been made without much discrimination, as regards quality, and consisting merely of surface ores, were sold (8th July) at 10*l.* 16s. per ton; other shipments realised as high as 31*l.* 9s. per ton—making, upon the whole, an average of 22*l.* 9s. The quality of the ores, as before stated, has greatly improved since the first shipments; and, from the writer's judgment and practical experience in these matters (of more than 15 years in the Republic of Mexico), they will, doubtless, average a return of 35*l.* per ton—even if taken at a reasonable computation. Allowing them, however, to realise no more than the same average as the first shipments already disposed of at Swansea:

Say, upon 5738 tons of ore, at 22*l.* 9s. per ton	£128,812	2	0	
1462 tons smelting ores, at 8*l.* per ton..	11,696	0	0	—140,514 2 0
Deduct, as above, total cost of 7200 tons				57,834 12 0
Leaving a total of				£ 82,679 10 0

Which, being divided amongst 2464 shares, would give an annual return to each scrip of 33*l.* 11s.—less agent's commission for sale in England. Should the calculation be made in accordance with the continued improvement in quality of the ores, then the annual profit to each scrip, or share, would be surprisingly great. Such has been the success attending this undertaking, that the shares, which originally cost 5*l.*, have been sold here as high as 150*l.*, with one year's credit and security—100*l.*, cash, is the ruling price at present, and few shares are offered in the market. We feel persuaded, that, ere six months elapse, their value will be greatly enhanced, and especially so, upon the receipt of the succeeding account of sales; indeed, had not the losses of last years been so severe, investments which have been made by small capitalists recently arrived from England, would not have been accomplished upon these terms The greater proportion of the ores extracted are red oxides, varying in quality from 35 to 80 per cent. copper. Considerable quantities of malachite, from 40 to 60 per cent. of copper, have been taken out; and, during the last week, a parallel lode of black oxide, with native copper, has been cut. This latter circumstance sufficiently establishes the richness of the district for this mineral.

PRINCES ROYAL.—This is the corresponding half "Special Survey," and possesses the same lode of copper as the Burra Burra. The proprietors, however, have not given this mine a fair trial—inasmuch as they have employed inexperienced individuals in opening the lode. There cannot exist a doubt as regards its being a very valuable property; and, as they have engaged an experienced Cornish miner, lately arrived, it will give positive proofs to that effect. The scrips are nominally quoted at 220*l.*—original cash 50*l.*

KAPUNDA.—9-20ths of this property (160 acres), we understand, is sold to an English Company for 27,000*l.*: the remainder belongs to the original proprietors, Messrs. Bagott and others, who have thrown no shares into the market. The profits which have arisen from this undertaking, although nearly the first fruits, have been very considerable.

GRAND JUNCTION COMPANY.—About 1100 acres, surrounding the last-mentioned mine. As great competition prevailed at the time, these sections were offered on sale. This property was purchased at a very exorbitant rate; 7100*l.* were paid for the section adjoining, and in the same bearing as the Kapunda lodes, as being the most valuable. This, however, is greatly depreciated in value, by the existence of a slide of blue strata, which completely intercepts the course of the lodes, and is of great extension, running longitudinally through the same. This is a property which requires for its management an individual of more than limited knowledge in mining matters, which the directors have not considered necessary; their works of discovery have, consequently, proved failures, and the shares are nominally at 50 per cent. discount. We cannot foresee any probability of improvement for any definite period.

MONTECUTE.—We have been informed, that this section of land, in which is the mine, has been sold in England; the workings are for the present suspended.

THE ADELAIDE COMPANY have several sections containing mineral, advantageously situated 11 miles from this town. Some large copper deposits have been discovered, and about 50 tons of ore, ready for shipment, have been raised from the course of the lodes. The plan of operations which the miner has adopted, will shortly prove the value of this property. Shares are at a small advance.

RHINE, or PUNIWIRTA, has many good indications of the existence of copper lodes, but has not yet been sufficiently explored or proved. Nine sections, which comprise this property, were purchased almost at the upset price of 20s. per acre; and as, on this account, the company have considerable funds to prosecute their labours and discoveries, shares are selling at 50 per cent. advance.

ROYAL ADELAIDE.—5000 shares of 10*l.* (10s. paid); have nine sections of land, near the Kapunda, with no surface indications; and as no discovery works have been made, no opinion can be satisfactorily given relative to their eventual success, as regards this their first purchase.

MOUNT REMARKABLE.—Special survey; distance 150 miles from Adelaide; shows good indications in many places upon the surface. A party of miners have recently proceeded thither for the purpose of commencing operations. Shares in this company are, of course, at a nominal price.

VICTORIA GOLD MINE.—A very superior quality of gold has been taken out of this mine, which was originally worked as a copper lode. Its extent varies from one to two inches in breadth; but, as in all gold countries, and gold veins, its existence is very uncertain, so in this instance it has only been found in three distinct places, and this not in sufficient quantities to pay the expenses of the workings.

GENERAL OBSERVATIONS.—Since the Government has withheld the sale of mineral land, some rich districts have been discovered. Amongst these are two special surveys, which have been applied for by different parties. Sooner or later, Government must continue the sale of land upon the usual terms; and these will afford (as far as we can judge) an advantageous opportunity for speculation; they are the Emu Flats and the Rhine districts. We apprehend there will not be any difficulty in raising the full amount—say 20,000*l.* for each survey—whenever Government offer them for sale. The London Australian Mining Company is ready and able to purchase either, and have applied for one. We have no intelligence of the proceedings of the companies who purchased the northern and southern limits of the Burra Creek survey. The former, we believe, is the property of a company formed in Sydney, and have only made preliminary preparations. Our opinion of this property is very favourable.—*Adelaide, Dec.* 10.

New and increasedly rich discoveries have recently been made at the Burra Burra, which a leading colonist, fully capable of appreciating that extraordinary property, is wont to call "the eighth wonder of the world." The newly-discovered ore contains embedded masses of virgin copper, which substance is otherwise plentifully disseminated in the ore. Specimens of peculiar brilliancy are now being subject to special analysis.—*Adelaide Observer.*

The purchase of the Mount Remarkable Special Survey was closed yesterday, the payment having been made with 15,000*l.* in sovereigns, and 5000*l.* in silver—at sight of which latter, although admitted to be "a legal tender," the gentlemen at the Treasury looked aghast, as much as to say, they would rather have had a cheque on the bank, if it were not against the new rules requiring payment in coin.—*Ibid.*

On Saturday last, some specimens of copper ore from the surface of the land lately purchased by the South Para Mining Association were brought into town, and laid before a board of inspectors, whose report was highly satisfactory to all concerned.—*South Australian Register.*

Evidences of a valuable discovery *in the south* are highly satisfactory, if not conclusive. The Great Southern Mine was formed some weeks ago, and the practical exploration will, doubtless, be undertaken as soon as instructions can be received from the associated proprietary in England. The fine specimens of ore alluded to—azure-blue carbonate of copper—have been found on the town lands of the "Currency Creek" special survey, situate only about seven miles from the anchorage of Freeman's Knob, and the line of route for land carriage is particularly favourable and free from intersecting creeks. Arrangements have been very considerately made, with a view to the due reward of the discoverer, and precise particulars have not yet been suffered to transpire; but the sanction of the English proprietors is anticipated, and a greatly-increased value for their lands will thereby be secured.—*Adelaide Ob.*

The progress of mineral discovery is advancing. Fine specimens of ore, azure-blue, carbonate of copper, have been found in town-lands, on Currency Creek, with a favourable line of land carriage. A rich lode of pure malachite had been struck in the Burra Burra Mines.

MECHANICAL INDUSTRY OF SOUTH AUSTRALIA.

We gather the following particulars respecting the position and prospects of different descriptions of mechanical industry, and the rates at which mechanics and labourers are paid, from the *Adelaide Observer* of the 10th Dec. last:—

Blacksmiths are fully employed—wages 30s. to 40s. per week.

Carpenters are in full work at 6s. to 7s. per day.

Engineers are getting 7s. to 9s. per day; and from the circumstance of two millwrights and two engineers being advertised for by one of our founders, we presume there are no longer any supernumeraries in these important branches of mechanics.

Labourers in town find employment very plentiful, and earn 21s. to 25s. per week. In the country the wages are generally 12s. per week, with weekly rations, consisting of 10 lbs. to 12 lbs. flour; 10 lbs. to 12 lbs. fresh meat, 2 lbs sugar; and ½ lb. tea.

Miners employed at day work do not consider themselves sufficiently paid at 30s. per week—many are requiring 40s. to 42s. per week, and not a few have been earning considerably more on tutwork or tribute. At the Parringa Mine the men have struck for 42s., and as most of the men at the Burra Burra are knocking off for the Christmas holidays, there will be a partial suspension at several of the mines for a season. And a rare Christmas we expect they will spend, numbers of them having bespoke beds at the principal inns, and given their orders to the landlords with as little regard to expense as if they were the lords of the soil, instead of its underground workers.

Quarrymen, who have resisted the temptation to turn miners, are earning 21s. to 25s. per week. The slate quarrymen now find additional employment in providing roofing slate for new churches and chapels, and there is a better prospect of exports of slate than heretofore.

Slaters (roof) are not so fully employed as they ought to be, when we consider the unlimited supply of slate obtainable in the colony; but the prejudice in favour of shingles, as forming a cooler roof, is not yet overcome, as it is likely to be eventually, by sensible modes of ventilation.

Tinmen are fully employed, and pretty well paid; but many journeymen do not appear to be in request, because most of the masters attend to the execution of orders themselves—we may put down wages at 30s.

WHEAL CURTIS MINING COMPANY.—CAPTAIN TEAGUE.

SIR,—The letter that appeared in your Journal of the 13th March, signed "J. O.," and dated St. Austell, contained a sufficient apology for the outrage done the late Captain Teague, contained in a report on Wheal Curtis, from Captain Crease, in a former Journal, and on which I wrote a few strictures—part of which you published; and with that letter, the strictures, and the report, I hoped the subject would have dropped, and persons reporting on mines would be induced to attend to what they wrote, and learn when to stop. I am not a little surprised, however, to find my hopes frustrated, and Wheal Curtis made the target for another marksman's bullet; my remarks were intended for the reporter and not the reported; and had others dealt their blows at him, instead of the late Captain Teague, or the mine, I had been spared the labour of writing a second letter; nor should I write even now, did I not see men coming forward—hazarding their reputation—heaping up rubbish, doubtless with the intention to render that stable, that has too broad a foundation to be moved by any sarcastic or other power that may be brought to bear against it—viz., Wheal Curtis.

And for the present I intend adverting to the last letters that appeared in the *Mining Journal*, on the 27th of March and the following week, signed "H. A. Vivian, Camborne." Mr. Vivian says, Captain Teague offered him the mine at one time for 40,000*l.* and to which I add, perhaps it requires a resurrection from the dead to prove that statement incorrect; and also, that in the 19th century every man's *ipsit dixit* is not to be relied on, unless it contains evidence in itself of its truthfulness; and if, from reason and argument, inferences can be drawn akin to the statement advanced, then such statement is set down with the public for truth. But should any part of the statement be founded in error, and this error be proved, will not this go a great way to upset the statement altogether? I think here the philosophical axiom will apply, "that nothing can produce what is not in itself." Now, if Mr. Vivian was offered this mine, as he says, for this large sum of money, may not an enquiry be made, in reason to this effect?—An offer of this sort must have been the result of deliberation consultation, and, in all probability, of correspondence—consultation on the part of Captain Teague with his confidential agents, and correspondence with Mr. Vivian. If this be reasonable, I may add that his agents say that no such correspondence nor consultation existed." Again, Captain Teague is said to have opened up Curtis Mine for SALE; and, because he did so, put up a poor 42-in. engine, 2 ft. stroke, in the shaft, which consumed as much coals as a 70-in. engine would do going 9 ft. strokes. I would ask, is not this conduct somewhat different to that of merchants generally, who, if they would exhibit a sample of what they have for sale, such sample is generally equal, if not superior, to the whole lump to be disposed of? And the engine, being the most conspicuous item in the mine, may be compared to the sample. And the current conduct of merchants in the world being opposed to the course laid down by Mr. Vivian, the inference drawn from it is, that the statement lacks evidence to sustain it—viz.: the ruling motive was to set up for sale. Again, Mr. Vivian says, it was a 42-in. engine, 2 ft. stroke; or take his corrected statement, which appeared the following week—viz., 45 in. engine, 5 ft. stroke.—Now take the first—and upon his own showing in his last, his statement in his first is incorrect; and the latter I find to be incorrect, from the engine reports of the late Capt. W. Tonkin, of Redruth, and other places, the length of the stroke being considerably more than stated by Mr. Vivian. Again, the consumption of coals was equal to a 70 in. engine, 9-ft. stroke. This weapon in the hands of Mr. Vivian does not appear to cut the way he intended, nor answer his purpose at all; he seems not to be aware, that the thrust he has made with it can do no harm to the party for whom it was doubtless intended; and has yet to be told that it cuts coming outward, the edges being set back; for an engine of the description given by Mr. Vivian, must be of very superior parts, to do as well as one of 70-in. cylinder, 9 ft. stroke, and made, doubtless, on the most improved plan, just as he supposes is erecting on the mine at present. And, just to sustain this thesis, I may be allowed so say, that the average duty of Curtis engine was from 45 to 50 millions, and Mr. Vivian will search in vain for much excess of duty, on an average, on all the engines in Cornwall. I think, Sir, on this part of Mr. Vivian's letter, his is by no means a good case. But let us see a little further on. Mr. Vivian refers to Captain Teague as being a respectable miner, and would have you believe he esteemed him as such; and, immediately afterwards, accounts for his not doing his work so well as he ought, from the fact of his having too much to do, and gives an instance in Wheal Curtis. Mark his statement:—"They were about 10 years completing their underground operations, which ought to have been completed in less than five." * * * I understand Mr. Vivian to mean, that from the time the engine was set up, until the underground operations were completed at the 47 fm. level, was a period of 10 years, or twice as long as it should be. I say this being what we are to understand from this sentence, it affords ample ground for disputation. The engine was put to work about the middle of 1837, and ceased to work in the early part of 1840; was again put to work in the middle of 1841, and was finally stopped in the early part of 1844, making the whole period of the engine being at work about five years and three months, and, according to Mr. Vivian, just the time it should have been working if the mine had been under his superior direction. But, Sir, I will here anticipate an objection to this straightforward view of Mr. Vivian's statement, lest he should dare say he includes the time the mine was at work before the engine was set up; for should this be attempted, the reflection will fall, not on Capt. Teague, I think, but on his nominal co-adventurer, an old man well known to Mr. Vivian, who was paid by Capt. Teague for filling the office of Teague's agent in Wheal Curtis up to the time of his death; and thus was the old infirm man prevented becoming a burden to his children or the public; and Mr. Vivian will see I purposely omit that gentleman's name, out of the purest respect to his memory. And again, surely Capt Teague ought not to be blamed for the loss of all the money spoken of by Mr. Vivian, nor the inefficient way in which the mine is said by him to have been worked, as, out of the 5½ years the mine worked after the engine was set up, Capt. Teague only lived during that time about one year and a half. Are these things not so? And I challenge Mr. Vivian to successfully contradict them; then, I ask, with what show of propriety can so much be said against Capt Teague?—A CONSTANT READER.

Helston, Cornwall, April 17.

RAILWAYS IN INDIA.

Having, in last week's *Mining Journal*, given the reports of two important meetings on this subject, one of the shareholders in the East Indian, and the other in the Great Western of Bengal, Companies, as well as some valuable statistics as to cost, &c., we now proceed to notice a pamphlet by an engineer on the subject generally, and in which he has taken a luminous and extensive review of all the capabilities possessed by India as an extensive territory, and shows his thorough knowledge of the subject at large. After having, in a summary of contents, stated that the East Indian line (the most important in India) would return 21 per cent., the Indian Peninsula Railway 11 per cent., and the Madras Railway 6 per cent., without reckoning anything for increase of traffic, he first proceeds to a consideration of the railways in Bengal. Of the various lines originally projected in this presidency the East Indian and Great Western are about the only survivors. The former runs from Calcutta through Mirzapore, Allahabad, and other great commercial marts in the interior, to Delhi, in the North-West Provinces, and is, with its various branches, above 1000 miles long. The Great Western of Bengal is rather more than 180 miles long, extending from Calcutta to Rajmahal, a town at the head of the Delta of the Ganges. The East Indian will open up the most important districts of India, many of which are now inaccessible to commerce; and, by affording facilities for the rapid transport of troops, constitute a most powerful political engine for preserving tranquillity. The Great Western aspires to nothing more than to aid the Ganges trade, and he proceeds to show, that those lines which were constructed to aid navigation by a few miles, have never answered, from the objections entertained to the transshipment of goods, as experienced in the cases of the Glasgow and Greenock, Dublin and Kingstown, and London and Blackwall lines.

The East Indian Railway had its origin in the exertions of Mr. R. Macdonald Stephenson, who proceeded to Calcutta, and after conferring with the Government there, and collecting much information, returned to England, to press the subject at home. At first it was received with much apathy and scepticism, but was finally embraced; and a company, numbering some of the chief merchants in London, was formed, with a capital of 10,000,000*l.* sterling. He then enters into a long history of the negotiations entered into with the East India Company, the question of guarantee, limitation of amount of dividends, &c. The line itself, although of such length, presents no engineering difficulties, and can be constructed at moderate cost; and the author enters minutely into its importance in transporting troops, draining tiles, and agricultural produce, sugar, cotton, other tropical produce, grain, &c. The question of traffic is next considered, and it appears that the total value of imports and exports passing through Calcutta is 534,175 tons per annum. The quantity of treasure is 1,897,350*l.*, and total amount of merchandise 16,000,000*l.* per annum, a small quantity of which is consumed in Calcutta; and the trade in salt alone, is estimated at the enormous amount of 200,000 tons, and sugar 75,000 tons.

In the consideration of the materials best adapted for the formation of the permanent ways, &c., it is clearly shown, that there are various methods of resisting attacks of the white ant, and that there are even many kinds of timber which they will not touch; and that the various preparations of timber, by Kyan's, Payne's, coal-tar, chloride of zinc, pyrolignite of iron, and many others, will render timber for ever free from their ravages. The work is altogether worthy an attentive perusal, embracing a subject for the awakenment to a new existence of 150,000,000 of people, on whom the sleep of ages has fallen, by overturning their conceptions of time and space, unfettering their energies, rousing them to exertion by new incentives, and drawing European settlers into India, who will expend capital on land the railways will make productive, and thus furnishing an example to the natives, realising extensive improvements, and introducing the blessings of civilisation among that most extensive, but at present poor, community.

A deputation of ironmasters and coal proprietors of Swansea, had an interview with the Right Hon. Edward Strutt yesterday, at the office of the Commissioners of Railways.

A deputation from the Caledonian Railway Company, consisting of Mr. Manby and Mr. Oliphant, had an interview with the Right Hon. E. Strutt.

LONDON COAL DUTIES AND THE GREAT WESTERN RAILWAY.—A suit is pending between the City of London and the Great Western Company, as to the duties payable to the City on coals. It will be tried at the sittings after next term (June).—*Railway Record.*

CROYDON ATMOSPHERIC RAILWAY.—During the last few weeks four trains have got off the line, and considerable damage has been done to the piston carriages, solely from the circumstance that the new switchmen, put in by Mr. P. Clarke, to supersede the experienced men, have not known their duty.—*Ibid.*

ACCIDENTS ON RAILWAYS.—The return moved for by Mr. E. Buller, of the number and nature of accidents and injuries to life and limb which have occurred during the six months, ending December 31, 1846, now just printed, exhibits the following results:—40 lines make a return of an aggregate of 144 accidents, involving loss of life to 81, and injuries to 154. The lines on which the larger number of accidents have occurred are the

	Killed.	*Injured.*
Eastern Counties	4	34
Manchester and Leeds	10	14
Midland Counties	8	3
North-Western (London and Liverpool)	10	14
London and Brighton, and South-Western	4	29
Edinburgh and Glasgow	2	4
Great Western	3	0
North Union	5	11
Stockton and Darlington	4	4
Bristol and Birmingham	2	4
Manchester and Lincolnshire	3	2

As regards the class of accidents in which passengers are most interested—viz., collisions, the return shows 16 such cases, causing injuries to 70 persons, and death to 3. The return, which specifies the nature of each particular accident, likewise shows that the majority of the entire cases arise from the carelessness of the sufferers themselves; and of this class 40, mostly fatal, are from the single cause of crossing and walking on the lines in front of an advancing engine.

THE GREAT BRITAIN.—We have been informed that this noble ship is now in a favourable condition for being got off. On Saturday last, as soon as the water was about three-quarters up, she rose with it till high water, when she appeared from the shore to be nearly level—this is a very encouraging and promising circumstance. We understand that Messrs. Winstanley and Son, are to sell her stores by auction in the course of a few days at Liverpool.

GAS COMPANIES.—In the House of Commons, on Thursday evening, on the motion of Mr. Hume, the following return was agreed to:—Statement from every gas company, established by Act of Parliament, in the United Kingdom, stating the several Acts of Parliament under which established; the rates per 1000 cubic feet at which each company or corporation have supplied gas in each year since 1820, or, if later established, in each year from the year the company commenced to supply gas, and the price of the best coals in each year for the same period; also, stating the amount of fixed capital of each gas company, and the rate per cent. of dividend to the shareholders or proprietors on their shares in each year during that time.

WEST INDIA MAILS.—The *Thames*, Royal Mail steam-ship, Lieut. Philip Hast, commander, arrived at Southampton on Tuesday, with mails from the West Indies, in charge of Lieut. I. J. Wilkinson, R.N., Admiralty agent. The latest dates brought are as follow:—Tobago, March 22d; St. Vincent, 26th; Antigua, March 28th; Montserrat, 28th; Fayal, April 12th; Jacmel (Hayti), March 27th; Carriacos, 26th; Nevis, 28th; St. Kitts, 28th; and Tortola, 29th. The *Thames* brought in freight, 900 ozs. of gold-dust, 75*l.* British coin, and 769 ozs. of silver.

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning, Eleven o'clock.

Bank Stock, 7 per Cent., 193 4
3 per Cent. Reduced Ann., 86 5¾
3 per Cent. Consols Ann., 87 6¾
3 per Cent. Annuities, —
3¼ per Cent. Ann., 87¾ 8 7½
Long Annuities, 9¼ 8¾
India Stock, 10½ per Cent., 246½ 5
3 per Cent. Consols for Acc., 87 6¾
Exchequer Bills, 1000*l.* 2*d.*, 2 dis. par

Belgian Bonds, 4½ per Cent., 95¾
Dutch, 2½ per Cent., 58¾ ½
Brazilian, 5 per Cents., 83½
Chilian, 6 per Cents., 91
Mexican, 5 per Cents., 20¾
Spanish, 5 per Cents., 25 4¾
Ditto 3 per Cents., 35½
Portuguese, 4 per Cents., 34 ½
Russian, 5 per Cents., 110 ½

MINES.—There has been a considerable business transacted in the mining share market during the week, with a pleasing prospect of a continuance. The Cornish and Devonshire mines, generally, are reported to be looking extremely well—in several, great improvements have taken place; and dividend-paying mines, in many instances, present a greater probability of an early increase. North Roskear is represented to be much improved, which is partially borne out by the approaching sale. Stray Park, according to the report presented at the meeting, held on the 16th, is looking remarkably well; a dividend of 1*l.* per share was then declared. Perhaps, few mines present more cheering prospects than Wheal Franco does at present, in which many shares have changed hands since our last at an advanced price; there is every probability of this mine being in a position to pay her first dividend in June next. Birch Tor (Tin Mine, on Dartmoor) shares have been done this week rather freely, although they have not realised our former quotation; the mine is more than paying cost, and the tutwork doing is very great; the sole cause of the depression in shares is the debt due to the company's bankers. Some considerable business has been done in Dartmoor Consols during the week; but they have not maintained our last week's quotation.

Business has been done in the following shares—viz.: Wheal Providence, Wheal Trelawney, Drake Walls, East Tamar, Wheal Arvose, Stray Park, Dartmoor Consols, Wheal Franco, Kirkcudbright, Silver Valley, Herodsfoot, Herodscombe, Cubert, Wheal Calstock, Wheal Franco, Birch Tor, &c.

Several large transactions have taken place in Australians during the week, especially on arrival of accounts from the mines (which we give in another column), when business was done at a better price; subsequently a reaction has taken place, and the shares have not maintained former prices; there is, however, a tendency to improvement.

Kinzigthal shares have been much in demand, a great number having been done at 3 to 4, with every appearance of being better. Other foreign shares appear to have been at a stand still.

RAILWAYS.—On Monday and Tuesday the share market had not recovered in the slightest degree from the general depression of the previous week; no disposition appears to exist to revive speculation, and scarcely any business was effected. Towards the middle of the week there was little more activity, and no increase of prices can be noted, and the week may be said to have closed, without allowing the announcement of either the rise in value of shares, or in the business done; in fact, all kinds of railway stock is in a state of quiescence.

MEETINGS.—DUBLIN AND KINGSTOWN: half-yearly meeting; the statement of accounts showed that the income for the year had been 51,691*l.* 15*s.* 2*d.*—while last year it was 53,036*l.* 19*s.* 1*d.*; showing a diminution of 1345*l.* 3*s.* 11*d.*—WILTS, SOMERSET, AND WEYMOUTH: bills were approved for constructing a railway from Bleadon to Blandford, Compton to Wilton, with certain branches to each.—STIRLING AND DUNFERMLINE: special; to consider the purchase of the railway by the Edinburgh and Glasgow Company; the directors were authorised to petition against the bill by a majority of 1233 votes.

BATTLE OF THE GAUGES.—This contest has fairly begun, and bids fair to make a fine harvest for the long robe. The examination of Mr. Brunel took up the whole day before the committee; and, of course, his evidence went to show the Halesowen and Dudley line should be worked with the Oxford, Worcester, and Wolverhampton, and, consequently, by the Great Western. He drew a rare comparison between the benefit to the public which this arrangement would produce—of course, to the disparagement of the latter. We shall shortly see what they have to plead.

SECOND READINGS IN COMMONS.—Ambergate, Nottingham, and Boston, and Eastern Junction Railway (Alteration of Line, and Branches to Nottingham—by order).

Messrs. Lamond's sale, on Tuesday, was well attended, and a good many lots were disposed of, but without much improvement in prices. On Friday, the sale participated in the general depression, and when sales were forced, such depression was more perceptible.

HULL, THURSDAY.—The market remains in an unsatisfactory state, but any sudden fall in shares is not looked for, now that prices range so low generally. As investments, yielding safe and large returns of money, many of the older and guaranteed lines offer great temptation. As for speculation in shares, it is almost extinct.

LATEST CURRENT PRICES OF METALS.

LONDON, APRIL 23, 1847.

	£	s.	£	s.	d.
IRON—Bar *a*..Wales..*ton*	0	0—	8	15	0
„ ..London ..	9	15—	10	0	0
Nail rods „	0	0—	10	10	0
Hoop(Staf.) „	0	0—	12	0	0
Sheet „	0	0—	13	0	0
Bars „ „	11	0—	11	10	0
Welsh cold-blast foundry pig ..	4	10—	5	5	0
Scotch pig *b*, Clyde	3	10—	3	12	6
Rails, average	9	5—	9	10	0
Russian, CCND *c*..	0	0—	—		
„ PSI ..	0	0—	—		
„ Gourieff	0	0—	—		
„ Archangel	0	0—	13	10	0
Swedish *d*, on the spot	0	0—	11	15	0
„ Steel, fagt.	0	0—	16	10	0
„ „ kegs *e*	15	0—	15	5	0
COPPER—Tile *f*	0	0—	97	0	0
Tough cake	0	0—	98	0	0
Best selected	0	0	101	0	0
COPPER—Ordin. sheets, *lb.*	0	0—	0	0	11
„ bottoms .	0	0—	0	0	12
YELLOW METAL SHEATHING	0	0—	0	0	9¾
TIN—Com. blocks *g*..*cwt.*	0	0—	4	15	0
„ bars	0	0—	4	16	6
Refined	0	0—	4	18	0
Straits *h*	0	0—	4	12	0
Banca	0	0—	4	18	0
TIN-PLATES—Ch., IC *i*, *box*	1	9—	1	11	0
„ IX ...	1	15—	1	17	0
Coke, IC	1	6 6	1	7	0
„ IX	1	12 6	1	13	0
LEAD—Sheet *k* ....*ton*	0	0—	19	10	0
Pig, refined	0	0—	20	10	0
„ common	0	0—	18	15	0
„ Spanish, in bd.	17	10—	—		
SPELTER—(Cake) *l* on spot	0	0—	21	5	0
„ „ for arrival	0	0—	20	5	0
ZINC—(Sheet) *m* export.*	27	0—	28	0	0
QUICKSILVER *n* ....*lb.*	0	0—	0	4	6

a Discount 2½ per cent. *b* Net cash. *c* Discount 2½ per cent. *d* Ditto *e* In kegs ½ and ¼-inch. *f* Discount 3 per cent. *g* Ditto 2½ per cent. *h* Net cash in bond. *i* Discount 3 per cent. *k* Ditto 2½ per cent. *l* Net cash. *m* Discount 1½ per cent. *n* Discount 1½ per cent. * For home use it is 32*l.* per ton.

[*From our Correspondent.*]

IRON of all sorts may be quoted a little easier, owing to the state of the money market, &c., and orders have been taken below last quotations.

COPPER is firm, and in fair demand.

TIN, TIN-PLATES, and LEAD are as last reported.

SPELTER has improved 2*s.* 6*d.* to 5*s.* per ton, in consequence of large transactions here, and at Hambro', and is likely to maintain its position for some time.

GLASGOW PIG-IRON TRADE, APRIL 21.—From the causes mentioned in our last respects, and which still continue, even in an increased degree, the pig-iron market remains in the same inactive and depressed state. Holders seem of opinion, that from the extensive shipments of the article now going on, that prices will not go lower, and, therefore, are not pressing sales. Prices, in consequence, are much the same as our last quotations, and which we now give as the price of the day—viz., for No. 3, 70*s.*; for mixed Nos. 71*s.*; and for No. 1, 72*s.*—Cash, free on board. In some cases a little less has been taken.

BOMBAY, MARCH 15.—English iron continues in demand, but no further improvement has taken place in prices. A sale of 450 candies, of a common assortment, has been reported at 33 rs. In Swedish bars, on the departure of last mail, a sale of 200 candies of unsuitable assortment was effected at 48¼ rupees, and since, two sales of very good assortment, chiefly consisting of square bars, have been effected, one of 150 candies at 52 rupees, the other of 300 candies at 50 rupees per candy. In other irons, no alteration worthy of notice, excepting in sheets and hoops, on which a decline of one-quarter to one-half rupee has taken place. Copper continues in demand. The stock in the first hand is none, and that of the bazaars is very moderate. We, therefore, expect our present quotations will be maintained for some time to come. In Spelter, a speculative inquiry is going on from the European houses, in consequence of its having risen considerably in England; and, therefore, 12½ to 12¾ rupees are asked by the bazaar dealers, for a small quantity they hold of their former purchases. The following are the sales of metals that have been made since the 2d. inst.:—450 candies of English bar-iron, at 33 rupees; 150 candies of Swedish bar-iron, at 52; 200 candies ditto ditto, at 48¼; 300 ditto ditto, at 50; 300 cwt. Swedish steel in tubs, at 8¾; 700 cwt. ditto ditto, in tubs, at 8¼; 400 cwt. hoop iron, at 7; 125 candies square nail rod, at 46; 180 cwt. braziers' copper, at 61; 150 cwt. sheathing copper, at 58¼; 20 cwt. copper sheathing nails, at 56½ rupees.

CALCUTTA.—During the latter part of last month there was a moderate business doing in metals at about the previous currency, but even then the demand was far from brisk; whilst, throughout the past week, we have scarcely heard of a single sale; the native holidays of the 2d, 3d, and 4th, combined with the tightness in the money market, having kept dealers out of the market. Holders, however, show no symptoms of submitting to any reduction in their demands, and, in fact, iron is in most instances held for an advance, but, for the present, prices of all are in a measure nominal.

Imports in February were as follow—viz.: Copper—tile and ingot, 681 mds.; cake, 817; nails, 82; sheet, 1150; old, 297; Japan, 1909; slab, 1618. Iron—bar, 2755; pig, 544; nails, 21; spelter, 1361.

EXPORTATION OF THE PRECIOUS METALS.—The following are the official returns of the exports of gold and silver from the port of London for week ending 13th inst.:—

Gold bars to Hamburgh	1,400	ounces.
Ditto to New York	17,500	„
Ditto to Hamburgh	21,400	„
Ditto to Belgium	3,500	„
Ditto to Hamburgh	14,694	„
For the week ending the 20th inst.		
Silver bars to Hamburgh	54,726	ounces.
Silver coin to Port Adelaide	2,400	„
Gold coin to ditto	1,770	
Ditto to Ceylon	750	„
Copper coin to ditto	151	cwts.

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price.
1000	Abergwesin	7	12
512	Albert Consols	¼	2
1024	Alfred Consols	4¾	35
235	Andrew and Nanglies	28¾	18
10000	Ayrshire Iron Company	2½	2½
128	Balnoon Consols	25	25
10000	Banwen Iron Co.	2	—
1000	Barristown	4¾	25
4000	Bedford	2½	3½
128	Besore Lead Mine	14	10
315	Birch Tor Tin Mine	21½	11
8000	Blaenavon	50	40
100	Botallack	175	225
120	Brewer	5	7
10000	British Iron, New, regis.	10	17½
—	Ditto ditto, scrip	10	19
128	Budnick Consols	52½	40
128	Burthy	20	21
100	Bwlch Cwmerfin	20	—
128	Callestock	17	70
1000	Callington	19	29
256	Caradon Consols	47	4
256	Caradon Copper Mine	9¾	1
256	Caradon Mines	22½	20
256	Caradon United	24	15
256	Caradon Wh. Hooper	20	3
1000	Carn Brea	15	100
2048	Carmarthen Consols	2	5
112	Charlestown	200	100
166	Cleveland	9	1½-2
1900	Combmartin	7½	4½
1000	Comblawn	¼	1
128	Comfort	45	60
256	Condurrow	20	22
2560	Cook's Kitchen	2½	4
1000	Copper Bottom	1	5
1024	Cosheen	4½	20
240	Craddock Moor	15½	15
128	Creeg Braws	120	200
500	Cubert Mine	12	25
2048	Dartmoor Tin	2	2½
7100	Derwent	8½	5
1024	Devon&CourtenayCon.	5½	4
1000	Dhurode	2	5
186	Dolcoath	30	60
2560	Drake Walls	4	4
10000	Durham County Coal	45	9
256	East Alvenney	3	10
112	East Caradon	40	40
2048	East Crowndale	4½	2½
512	East Combe Silver-Lead	6½	6½
128	East Pool	5	20
100	East Relistian	22	40
9000	East Tamar Consols	1½	2½
—	East Wheal Albert	1	3
94	East Wheal Crofty	280	310
256	East Wheal Fortune	2	3
128	East Wheal Rose	50	1200
—	East of Scotland Iron Co.	2½	2½
123	East Wheal Seton	14	20
256	Exmoor Wh. Eliza	3½	10
512	Fowey Consols	40	45
20000	Galvanised Iron Co.	10	9½
10000	Gen. Mining Co. for Irel.	½	½
2048	Georgia Tin Mines	1½	1½
1000	Godolphin	25	35
256	Gonamena	21	50
128	Goonvrea	4	½
244½	Grambler & St. Aubyn	—	25
100	Great Consols	1000	400
256	Great Callestick Moors	22	25
2560	Great Michell Consols	1½	5
256	Great Resugga Moor	2	4
512	Gt. Wh. Rough Torr Con.	2	25
1500	Great South Tolgus	2	3
100	Grogwinion	5	—
1000	Gunnis Lake	1½	3
256	Gwinear Consols	5	25
1000	Hanson	14	2
1000	Harrowbarrow Old Mine	6½	3
800	Hawkmoor	3	2
6000	Heignston Down Con.	½	2½
256	Herodscombe	½	5½
256	Herodsfoot	14	11½-12
10000	Hibernian	12½	1
—	Hobb's Hill	4	3
1000	Holmbush	18	14
256	Ivy Tor	1½	2½
827	Kirkcudbrightshire	4½	6½
2048	Lamheroe Wh. Maria	9	4
74	Lanarth & Penstruthal	—	10
2048	Lanivet Consols	4	2
200	Larkholes	1	3
160	Levant	—	90
1000	Lewis	15	8
1280	Llancynfelin	6	10
1000	Llwyn Malees	5	—
3600	Llynvi Iron	50	60-65
256	Lostwithiel Consols	7	7
128	Ludcott	3	3
4000	Marke Valley	10	3½
5000	Mendip Hills	2	1½
20000	Mining Co. of Ireland	7	8½
256	New East Crowndale	3½	3½
128	North Fowey Consols	25	25
100	North Pool	45	130
70	North Roskear	10½	350
512	North Treburget	2	3
100	North United	41	20
256	North Wh. Abraham	½	12
262	North Wh. Leisure	1½	3½
128	North Wh. Providence	2½	7
15000	Northern Coal Co.	23	2
1200	Old Delabole Slate Co.	25	50
2000	Pantdrainlog Slate Co.	2½	3
128	Par Consols	900	1000
1024	Pembroke	1½	6
256	Penhallow Moor	15	4
4000	Pennant	1	3
100	Penrhiw	30	65
256	Pentuan Wheal Mary	2½	6
128	Pen-y-Cefn Mine	50	55
1280	Perran St. George Un.	13	20
128	Perran Wh. Virgin	9½	65
512	Plymouth Wh. Yeoland	2½	5½-6
2048	Prince Edward	1½	1½
112	Providence Mines	35	45
256	Redruth Consols	3	10
10000	Rhymney Iron	50	30
256	Rose Consols	10	6
1000	Rosewall Hill	1	5
—	Shotts Iron Company	50	70
2500	Silver Valley	4	1½
256	Sourton Consols	3½	3
128	South Caradon	10	400-10
2000	South Dolcoath	2	2
256	Sth. Friendsh. Wh. Ann	14	14
200	South Harvannah	23	26
9000	South Tamar	½	¼

BRITISH MINES—*continued.*

Shares.	Company.	Paid.	Price.
256	South Tolgus	2½	20
800	South Towan	10	1½
256	South Trelawney	15½	10
128	South Yeoland	16½	20
128	South Wheal Basset	110	90
124	South Wh. Francis	160	230
256	South Wh. Hope	—	5
1000	South Wh. Maria	2½	2
256	South Wheal Rose	11½	1
10000	Southern&Western, Irish	2	4-5
256	St. Austell Consols	8	14
94	St. Ives Consols	—	320
128	St. Michael Penkivel	5	7
1000	Stray Park	43	29
9600	Tamar Consols	3	5½
1024	Tavy Consols	4	3
6000	Tincroft	7	9
3000	Tin Vale Consols	½	1½
256	Ting Tang	15	12½
128	Tokenbury	140	17½
256	Tolpetherwin	3½	3½
256	Trehane	2	22
5000	Treleigh Consols	6	4
256	Trenow Consols	30	25
96	Tresavean	10	200
120	Trethellan	5	35
120	Treviskey and Barrier	130	180
256	Trewollack	20	20
128	Trewellard	12	26½
6000	United Hills	5	1
100	United Mines	300	500
10240	Victoria Tin	1	1
256	Wellington Mines	15	30
128	West Basset	45	28
256	West Caradon	20	168
128	West Cargoll	2	12
512	West Fowey Consols	40	15
256	West Grambler	7	8
—	West Kekewich Consols	—	3
256	West Providence	9½	18½
200	West Seton	40	70
—	West of Scotland Iron Co.	155	169
120	West Trethellan	5	25
256	West United Hills	2½	6
256	West Wh. Friendship	7½	4
3845	West Wheal Jewel	11	2½
2560	West Wh. Maria	1½	1
256	West Wheal Shepherd	5	22½
256	West Wheal Tolgus	21½	4
256	West Wheal Treasury	19	20
5200	Wicklow Copper	5	15½
184	Wheal Adams	41	28
1000	Wheal Agar	—	8
256	Wheal Albert	10	8
128	Wheal Acland	13	2
256	Wheal Allen	1½	4
237	Wheal Anderton	16½	30
128	Wheal Ann	—	50½
128	Wheal Arvose	3½	4
1024	Wheal Ash	2½	10-12
2560	Wheal Barbara	1½	1½
256	Wheal Benny	6½	4½
256	Wheal Blencowe	8	10
256	Wheal Bucketts	20	30
256	Wheal Byon Consols	½	½
256	Wheal Calstock	3	4-5
136	Wheal Clifford	190	190
1024	Wheal Concord	6½	3
128	Wheal Courtenay	—	20
6000	Wheal Curtis	1½	1
256	Wheal Dyke	12	13
512	Wheal Elizabeth	2½	3
256	Wheal Fortescue	5½	9½
2048	Wheal Frederick	2	2
388	Wheal Franco	27	33
256	Wheal Gill	19½	9
1024	Wheal Grace	2	2½
128	Wheal Harriet	45	50
2048	Wheal Holwell	1½	1½
256	Wheal Jane	11	25
256	Wheal Kekewich	4	4
256	Wheal Louisa	6½	11
112	Wheal Margaret	79	200
256	Wheal Maria (Hayle)	19	30
1024	Wheal Maria	1	400
4000	Wheal Martha Consols	5	2
512	Wheal Mary Ann	5	25
256	Wheal Mary Consols	34	25
256	Wheal Mary (Lanivet)	6½	4
256	Wheal Maude	1½	1½
128	Wheal Metha	23	92½
128	Wheal Pollard	12½	12
210	Wheal Prospect	4	13
128	Wheal Reeth	1	17
128	Wheal Rose	60	55
99	Wheal Seton	214	800
256	Wheal Sisters	27½	30
256	Wheal Sophia	—	10
1024	Wheal Spearne	1½	8
128	Wheal St. Ann	9	15
260	Wheal Trelawney	7½	107
256	Wh. Tremaine (St. Ervan)	1½	20
256	Wheal Tremayne	35	50
128	Wheal Trew	20	21
256	Wheal Trevenna	3	4
92	Wheal Tryphena	140	150
128	Wheal Venland	12½	10
127	Wheal Virgin	50	60
256	Wheal Vlow (Perranz.)	½	½
188	Wheal Vyvvan	—	3
1024	Wheal Walter	4	2
256	Wheal Williams	2	18

FOREIGN MINES.

Shares.	Company.	Paid.	Price.
5000	Alten Mining Company	14½	4½
15000	Asturian Mining Co.	9	5-5½
20000	Australian	2	7-7½
10000	Anglo-Mexican Co.	100	1
12374	Ditto Subscription	25	2½
3000	Bolanos	150	6½
2000	Ditto Scrip	15	6
12000	Brazilian Imperial	20	2½
10000	Cobre Copper Co.	40	25½
8500	Colombian Co. regis.	55	4½
5000	Ditto Scrip	5½	
5000	Copiapo Mining Co.	14	3½
10000	General Mining Ass'n.	20	15½
5000	Kinzigthal Mining Ass.	2	3½-4
20051	Mexican Company	59	—
5000	Mocaubas & Cocaes	25	5½
29320	Rl. del Monte, regis. / Ditto unregistered	28½	av. 3½
	Ditto Red Debentures	—	16
	Ditto Black ditto	—	14
	Ditto Loan Notes	150	100
7000	Royal Santiago	10	5
2000	Pachuca Mines	4	4½
11000	St. John del Rey	15	7½
13174	United Mexican	28½	3

*** We should feel greatly obliged by agents, or others interested, furnishing us with such corrections for our Share List as we may not have received through our usual channels of information—our object being, to present as accurate a list of prices as can be obtained—to procure which, we solicit the aid of correspondents in general.*

SOUTH AUSTRALIAN SHARE MARKET.

Shares.	Company.	Paid.	Price.
2000	Adelaide	5	6
600	Barossa Range	4	24
2464	Burra Burra	5	90
436	Grand Junction	15	28
200	Greenock Creek	5	12
100000	Scottish Invest. Co.	1	1½
18	South Para	15	50
1000	Poonawurta	—	9½-10
400	Princess Royal	—	259
10000	Royal South Australian	—	55½
600	Victoria	2	2
500	Wakefield	2	2

SOUTH AUSTRALIA AND NEW ZEALAND.

100000 North British Australasian (Kaw-aw, &c.) .. 1 .. 1½

JOINT-STOCK BANKS.

Companies.	*Shares.*	*Paid.*	*Price.*
Australasia	22,500	£40	£22
British North American	20,000	50	45
Colonial	20,000	25	15½ ¾
London and Westminster	40,000	20	26½
London Joint-Stock	60,000	10	15½
National of Ireland	20,000	22½	19½
Provincial of Ireland	20,000	25	43½
Ditto New	4,000	10	16
Union of Australia	20,000	25	24½
Union of London	60,000	10	12½

THAMES TUNNEL COMPANY.

The number of passengers who passed through the Tunnel in the week ending April 17, was 17,385; amount of money, £72 8*s.* 9*d.*

CURRENT PRICE OF GOLD AND SILVER.

Foreign gold in bars .... per oz. £3 17 9 | New dollars .... per oz. £0 0 0
„ „ Portugal pieces.... 0 0 0 | Silver in bars (Standard) 0 4 11½

CORNWALL.—HIGHLY-IMPORTANT SHARES IN THE GREAT ST. GEORGE AND WHEAL PERRAN MINES.

MR. TIPPET has received instructions to Offer for Sale, by PUBLIC COMPETITION, on Wednesday, the 5th day of May next, at Three o'clock in the afternoon, at Pearce's Royal Hotel, Truro, in fourteen lots, 17-1280ths undivided Shares of and in all those most important and valuable COPPER MINES, called GREAT ST. GEORGE and WHEAL PERRAN, situate in the Parish of Perranzabuloe, in the County of Cornwall.

Full and descriptive particulars whereof will be ready for delivery in a few days; in the meantime, the Mines may be inspected, and every information given by Capt. Pill, on applying to him thereon; and all further particulars obtained at the office of Mr. TIPPET, Pydar-street, Truro.—Truro, April 23, 1847.

PRICE OF MATERIALS,

As Charged at the Stray Park Mines in the following months of 1847:—

DESCRIPTION.	JANUARY.	FEBRUARY.
Coal, carriage included	15*s.* 6*d.*	15*s.* 6*d.* per ton
Timber, balk	1 2	1 2 per foot
„ rod	2 6	— „
Iron, common	10 0	10 0 per cwt.
„ rivet	16 6	16 6 „
„ hoop	14 6	14 6 „
„ boiler-plates	17 0	— „
Oil, rape	—	3 3 per gall.
Lead, white	26 0	— per cwt.
Nails, patent	—	19 0 „
Candles	6 0	6 0 per doz.
Powder	38 0	38 0 per cwt.
Cans	4 6	4 6 per doz.
Safety fuze	0 4	0 4 per coil.

LEAD ORES

Sold, at Truro, April 16, 1847.

Mine.	*Tons.*	*Price.*	*Purchasers.*
East Wheal Rose	97	£13 4 6	Newton, Keates, & Co.
ditto	74	14 5 0	ditto
ditto	73	14 12 6	ditto

Sold at the Mine, on the 17th April, 1847.

Mines.	*Tons.*	*Price.*	*Purchasers.*
Cubert Mine	60	£12 0 0	Walker and Co.

Sold in London, on the 17th April, 1847.

Mines.	*Tons.*	*Price.*	*Purchaser.*
Llancynfelin Mines	40	£10 7 6	B. Somers.

Sold at Holywell, 20th April, 1847.

Mines.	*Tons.*	*Amount.*	*Purchasers.*
Pantymwyn	20	£10 14 0	Mather and Co.
Garrigberth	20	11 11 0	Ditto
Bwlcryddaifryn	6½	11 6 0	Walker and Co.
Penyrtemblas	44	11 14 0	Mather and Co.
ditto	44	11 15 0	Walker and Co.
Westminster	62	10 16 0	Mather and Co.
ditto	38	11 4 0	Walker and Co.
Belgrave	25	11 2 0	Mather and Co.
Jamaica	30	11 0 0	Walker and Co.
ditto	15	12 12 6	ditto
Goginan	105	15 0 0	ditto
ditto	40	14 0 0	ditto
Frongate	33	10 7 0	ditto
Lisburne	22½	10 13 0	Mather and Co.
ditto	22½	10 13 0	Newton, Keates, & Co.
Culconroy	34	13 11 0	Mather and Co.
Peel	60	12 1 0	ditto
ditto	60	12 1 0	Newton, Keates, & Co.
Douglas	40	11 12 0	ditto
ditto	40	11 12 0	Mather and Co.
Mactrynath	42	11 12 0	Newton, Keates, & Co.
Llanfair	27	24 15 0	Walker, Parker, & Co.
ditto	22	25 4 0	Mather and Co.

Sold at the Mine, on the 21st April, 1847.

Mines.	*Tons.*	*Price.*	*Purchasers.*
Wheal Adams	11	14 0 0	Mullins and Co.
ditto	17	10 6 6	ditto
ditto	15	8 7 6	B. Somers.

COPPER ORES

Sampled April 7, and Sold at Andrew's Hotel, Redruth, April 22, 1847.

Mines.	*Tons.*	*Price*	*Mines.*	*Tons.*	*Price.*
Devon Gt. Cons.—Wh. Maria	130	£7 10 0	Wh. Friendship	91	£9 14 6
ditto	129	7 5 6	ditto	46	3 4 6
ditto	128	6 7 6	Tresavean	91	5 6 6
ditto	125	7 15 6	ditto	76	6 5 0
ditto	101	6 18 0	ditto	71	4 0 0
ditto	80	7 9 6	ditto	5	36 2 6
ditto	61	7 12 0	West Wh. Jewel	67	5 1 0
ditto	56	5 5 6	ditto	55	3 18 0
Wh. Fanny	76	6 15 0	ditto	43	2 14 6
ditto	53	6 8 0	Marke Valley	125	3 9 0
ditto	31	4 9 0	Bedford United	120	7 11 6
Wh. Josiah	42	6 11 0	Wh. Brewer	39	2 6 0
ditto	24	16 5 0	ditto	35	2 19 0
West Caradon	102	7 0 6	ditto	30	1 12 6
ditto	101	6 14 6	Holmbush	84	6 16 6
ditto	62	6 7 6	West Trethellan	76	4 1 6
ditto	58	10 6 6	Charlestown United	58	16 17 6
ditto	43	4 10 0	Wh. Busy	24	3 3 6
Fowey Consols	108	7 0 0	ditto	22	2 15 6
ditto	105	5 14 6	East Relistian	15	6 2 6
ditto	99	6 1 0	Wh. Gorland	14	6 11 0
Wh. Friendship	113	8 1 0	Hallenbeagle	7	4 9 6
			Penstruthal	4	4 17 0

TOTAL PRODUCE.

Devon Gt. Cons.—Wh. Maria, Wh. Fanny, Wh. Josiah	1036	£7410 10 0	Bedford United	120	£909 0 0
			Wh. Brewer	104	241 14 0
			Holmbush	84	573 6 0
			West Trethellan	76	309 14 0
West Caradon	366	2583 7 6	Charlestown United	58	978 15 0
Fowey Consols	312	1956 1 6	Wh. Busy	46	137 5 0
Wh. Friendship	250	1942 19 6	East Relistian	25	153 2 6
Tresavean	243	1424 4 0	Wh. Gorland	14	91 14 0
West Wh. Jewel	165	670 0 6	Hallenbeagle	7	31 6 6
Marke Valley	125	431 5 0	Penstruthal	4	19 8 0

Average Standard ....£102 13 0 | Average Produce 9
Average Price per ton £6 9 6
Quantity of Ore .... 3035 tons. | Quantity of Fine Copper, 274 tons 15 cwts.
Amount of Money £19,863 13 0

LAST SALE.—Average Standard......£112 11 0.—Average Produce...... 8

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Mines Royal	167	£959 11 6
English Copper	300	2115 16 6
Vivian and Sons	655½	4467 13 0
Freeman and Co.	282½	1758 10 6
Grenfell and Sons	355	2295 2 0
Sims, Willyams, and Co.	453	2546 18 6
Williams, Foster, and Co.	822	5720 1 0
Total tons	3035	£19,863 13 0

Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth.—Mines and Parcels.—United Mines 1462—South Caradon 394—Treleigh Consols 232—Par Consols 232—Creeg Braws 161—Wh. Sisters 138—North Downs 43—South Tolgus 32—East Crinnis 5.—Total, 2699 tons.

Copper ores for sale on Thursday week, at Tyack's Hotel, Camborne,—Mines and Parcels.—North Roskear 1020—Consolidated Mines 718—Tincroft 527—Wheal Seton 377—Fowey Consols 276—South Wheal Francis 191—Wheal Bucketts 149—South Roskear 134—Wheal Harriet 102—Lanivet Consols 100—Wheal Vyvyan 67—Tretoil 44—Wheal Ruby 20.—Total, 3725 tons.

COPPER ORES

At SWANSEA, for Sale April 29.—Cobre 107, ditto 91, ditto 81, ditto 58, ditto 111, ditto 106, ditto 101, ditto 59—Chili 95, ditto 90, ditto 69, ditto 53, ditto 52, ditto 46, ditto 50, ditto 49, ditto 48, ditto 41, ditto 40—Cuba 110, ditto 101, ditto 96, ditto 62, ditto 56, ditto 110—Santiago 95, ditto 78, ditto 70, ditto 58, ditto 52, ditto 48, ditto 47—Berehaven 117, ditto 109, ditto 95, ditto 54—Knockmahon 113, ditto 84—Burra Burra 66, ditto 61, ditto 3—Ballymurtagh 37, ditto 15, ditto 2—Holyford 33—New Zealand 32—Canadian 1.—Total, 3199 tons.

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Holywell Main 15 6—Tanfield Moor Bute's 15 3—West Hartley 17 6—Wall's End Bewicke and Co. 16 9—Brown's Gas 14 6—Eden Main 17 3—Shotton 18—Stewart's 19—Cassop 17 6—Hartlepool 19—Hudson's Hartlepool 18—High Thornley 16—Heugh-hall 17—Thornley 17 3—Gordon 15—Seymour Tees 17—Tees 18 9—Cowpen Hartley 17 6—Sidney's Hartley 17 6—South Durham 16 6.—Ships at market, 28.

WEDNESDAY.—Holywell Main 16—West Hartley 17 9—Wall's End Brown's Gas 14 6—Hotspur 16 3—Northumberland 16 3—Walker 16 3—Wharncliffe 17—Braddyll's Hetton 18 9—Hetton 19—Lambton 18 9—Stewart's 19—Cassop 17 6—Hudson's Hartlepool 18—High Thornley 15 9—Heugh-hall 17—Adelaide Tees 18—Seymour Tees 17 3—Cowpen Hartley 17 9—Sidney's Hartley 17 9.—Ships at market, 29; sold, 25.

FRIDAY.—Buddle's West Hartley 17 6—Chester Main 15 9—Dipton Tanfield 14 6—Holywell Main 16 3—New Tanfield 15 6—Original Tanfield 14 6—Tanfield Moor 16 9—Wylam 15 3. Wall's-end:—Bewicke and Co. 16 9—Gosforth 16 9—Hedworth 15—Hilda 16 6—Killingworth 16 9—Riddell's 16 9—Wharncliffe 15 9—Eden Main 17 6—Belmont 17 9—Braddyll's Hetton 18 9—Bell 17 9—East Hetton 16 9—Haswell 19 6—Hetton 19—Keepier 18—Lambton 18 9—Russel's Hetton 18 9 Shotton 18 3—Stewart's 19—Cassop 17 9 to 18—Hartlepool 19—Hudson's Hartlepool 18—High Thornley 16—Heugh-hall 17—Kelloe 18 6—Thornley 17 6—Seymour Tees 17 6—South Durham 16 6—Tees 19—Whitworth 15 6—Cowpen Hartley 17 6—Derwentwater Hartley 17—Howard's West Hartley Netherton 17 6—Llangennech 22 6—Sidney's Hartley 17 6.—Ships at market, 128.

QUICKSILVER BOTTLES.—About TWO THOUSAND SIX HUNDRED WROUGHT-IRON QUICKSILVER BOTTLES TO BE DISPOSED OF; they are quite sound, and in good order. The lot weighs 19 tons 15 cwts., and would be sold by weight, or otherwise—the owner having no further use for them. —Apply at Plumley's Iron Wharf, Bankside, Southwark. 47

NOTICES TO CORRESPONDENTS.

It will at all times save much trouble, and frequently considerable delay, if communications are simply directed— To the Editor,

Mining Journal Office,

26, Fleet-street, London.

Also, to avoid trouble, Post-Office Orders should always be made payable to William Salmon Mansell, as acting for the proprietors.

Dr. Murray.—In answer to many inquiries, we have to state, that our excellent correspondent has been suffering from a severe attack of influenza: but we are happy to announce, that he is now recovering, and we hope to have the pleasure of resuming his communications in our next.

"E" (Aberburton).—The report of Wheal Collier meeting appeared in the Journal of the 10th inst.

"T. H. M." (Penston Colliery).—The works are published separately, and can be had, on application, of Mr. J. Weale, bookseller, 59, High Holborn.

The continuation of the paper, On Protection of Buildings, &c., from the Effects of Discharges of Atmospheric Electricity, is postponed for some necessary engravings.

The communication from Mr. John Darlington, On the Ventilation and Working of Collieries, reached us too late for this week—it shall appear in our next.

"G. W." (Dudley).—Applications respecting the Clanny Lamp, should be made to Dr. Clanny, Sunderland.

"W. R." (Glasgow).—Mr. O. Evans, an American citizen, proposed a plan, in 1772, "for propelling land carriages, without employing animal power." In an early Number we will give some interesting particulars in reference to the subject. [We repeat this "notice," in consequence of an error occurring in last Journal.]

The Mining Journal is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all the news agents, at the Royal Exchange, and other parts of London.

THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, APRIL 24, 1847.

We have in this Journal steadily maintained that the importation of breadstuffs from America, coupled with the altered tariff on the importation of iron into America, would make the Americans customers to a greater extent than formerly for pig and manufactured iron; and the Glasgow market, since the arrival of the *Hibernia*, is represented to be at the beginning of a considerable advance, although at present quotations cannot be given much higher.

In the City article of the *Times*, the favourable accounts by the *Hibernia* are confirmed—but without giving credit to the extent of the orders for British manufactures, spoken of in some quarters, it is stated the accounts by this packet furnish signs of a decidedly "good" trade.

In our last Number, it is recorded in the new Customs Bill, presented to the Chambers by the Minister of Finance, in France, there is a clause exempting sheet-iron, iron in bars, copper, and zinc, from the payment of all import duty, provided they be employed in the construction of vessels for the merchant navy, within one year after their importation, which is an additional reason for the better appearance of the pig-iron market in Scotland. These evidences of prosperity, in the present state of the money and corn markets, argue favourably for an important advance in iron, when the present, to a certain degree, depressing influences are removed; and removed they assuredly will be, as the operation of the exchanges draws back a proportion of the bullion left, and now leaving, the country; and the American orders, consequent on the profits of breadstuffs, increasing American expenditure, create a demand for articles of dress, and other British manufactures.

With reference to railway undertakings, the 200,000 men employed still continue their work, and railway debentures advance in the estimation of the public. In connection with the present value of money, a morning contemporary observes—"Were the investments in railways a mere speculative bubble, the measures now pursued by the Bank would soon put them *hors de combat*—but experience has shown that the security is as good as the public funds; and as debentures, bearing 5 per cent. interest, are equivalent to a 3 per cent. of stock at 60, with the certainty of the return of the whole amount of the capital, no such disparity, as now exists between them, can be long maintained." Looking to the future, when the minds of the commercial community can be settled with respect to the next harvest, and these prospects be favourable, there appears every reason to expect, not only an extensive business throughout the manufacturing districts, but a rapid advance in the completion of the railways, on which so large a number of labourers have now, for several months, been daily employed. The question arises, can the iron be supplied when required? and will not the competition, to have the necessary supplies, create an important advance—seeing, that without "iron," no line can be put into working order? In conclusion, the 200,000 men employed are preparing roads to require, in one year, the entire make of iron in England, Wales, and Scotland; and with this important fact before them, we again leave the iron trade to form their own conclusions.

The tendency of all restrictive laws, under the futile term "protection," to act injuriously to every branch of trade on which they are brought to bear, was never more fully exemplified than on Tuesday evening last, when the select committee for considering the operation of the Navigation Laws on the importation of copper ores. The whole of the evidence went to show, that under the present state of commerce in every quarter of the globe, England was losing her smelting trade at home, and her copper trade in the markets of the world, through the effect of the duty on foreign copper ores, and the pressure of the Navigation Laws. The witnesses examined were Mr. Boardman, who had been in Chili and Peru for more than 20 years as connected with the South American trade; Mr. Brownell, of Liverpool; and Mr. Budd, of Swansea and Liverpool. Mr. Boardman proved, that previous to the imposition of the duty in 1842, there had been no exportation of ores to the United States from Chili, but since then it had been considerable, and had gone on increasing, and two smelting works have latey been erected there—one at Boston, the other at Baltimore. That there had been previously a trifling amount of smelting, but that it had increased since 1842 to five times the amount; and that the consignors of copper ores were obliged to send their produce to foreign countries in foreign bottoms, because they would not pay the exorbitant freights demanded by British owners. It was also proved generally, that smelting was being generally encouraged by the Chilian Government, and that much was actually sent to Sweden to be smelted—a proceeding which never took place before.

On Thursday, a deputation from Liverpool, Swansea, Manchester, Sheffield, and other large manufacturing towns, waited on Lord J. Russell and the Chancellor of the Exchequer, on this engrosing subject, when the merits were fully discussed; and it is to be hoped that the time is not far distant, when the Government will see the wisdom of, at least, some modification of these laws, and place them in such a position, that while they support our home trade, and the English miner, the British shipowner shall not be injured.

The subject of "Mining in the Maria District" has, of late, occupied our columns at considerable length. By no means the least important, nor the least promising, of the mines in that part of the county is considered to be the Great Wheal Martha. Our readers will have noticed, in our Journal for some weeks past, the reports of several meetings of the shareholders in this adventure. The sum of 20,000*l.* has been expended, and the mine presents appearances of the most promising character. To raise the necessary funds to carry on operations to (we hope) a successful result, it has been resolved to issue 1000 new shares, of 3*l.* each, to the present holders of the old shares. The reports of the directors, of Mr. P. N. Johnson, and of Capts. Prince and Penelunà, are before us. They, as we believe all practical miners who have visited the mines, have a very high opinion of the result of the workings. The old mine is sunk to the 90 fm. level, and the new mine to the 40 fm. level. At the latter, a large proportion of the original capital of 5*l.* per share has been expended in steam-engine, machinery, and other works not at first contemplated, but which have been fully justified by the very favourable appearances presented at the 10 and 20 fm. levels. It must be very satisfactory to the shareholders, to read so encouraging a report from so practical a man as Mr. P. N. Johnson. With reference to the new mine, he says:—"I have frequently visited the nearly adjoining mine of Wheal Maria, and find so much greater a resemblance of character of the mundic, being more crystalline, of the facings of the copper ore, and the nature of the accompanying spar in the east mine, to what we had at the old mine, that from this alone I should argue the proximity to a deposit of ore, or improvement of the lode in this more eastern extremity." Mr. Johnson also observes, that "much interest is now excited by the probable application of the arsenical pyrites, for which the Wheal Martha Mine has been peculiar; on analysing this mineral, it was found to contain—Iron, 27½ per cent.; arsenic, 36½; copper, 2½; cobalt, ½; sulphur, 17; silica, &c., 16—100. Should a market be established for this mineral, considerable profits may be anticipated from its sale, as a very large quantity would be returned monthly, at a remunerative price."

In another column will be found some interesting details on the coal-fields of India, from a pamphlet printed for private circulation, from the pen of D. T. Ansted, Esq., the professor of geology to the King's College, &c. The subject of the remarks is one of such immense importance at the present moment, when the formation of railroads throughout the length and breadth of India, is all but actually commenced, that we have given that portion of the pamphlet relating to the description of the various coal measures entire, as unwilling to mar its interest by any curtailment. Now, if there is one of the British dependencies in which an abundant supply of mineral fuel, of easy access, presenting facilities for working and carriage, is essentially necessary, it is our Indian possessions. In our present and last Numbers, we have given reports and statistics on two of these lines—the East Indian, and the Great Western of Bengal; the former of which will extend above 1000 miles in length—be the pioneer of railway enterprise in the eastern hemisphere, and carry the commencement of a higher degree of civilisation to that at present only semi-enlightened people. In a country, extending over such an extensive portion of the globe, covered with a population of 150,000,000 of people, and intersected by railways, extending from Bombay to Madras and Calcutta, and from the foot of the great Himalayan chain to Cape Cormorin in the south, about 20° of north latitude, it is clear that, without a wide spread supply of mineral fuel, the true advantages of the system which we have so effectually felt in England, cannot be carried out. From the varied details given by Prof. Ansted, it will be seen, there are no fears to be entertained from the extension of railroads being deterred from the sufficient want of fuel—for hundreds of miles, in every direction across the Peninsula, coal has been discovered; and although in many districts but little investigation has taken place, enough research has been made to satisfy the geologist that coal beds of enormous thickness exist; and that, let the railway system be carried to its utmost possible bounds, plenty of excellent fuel exists for its support. We trust, the extent of knowledge thus rendered familiar to every reader, will act as a spur to Indian railway enterprise; and that a very few years will see the traffic and commerce of that prolific territory placed on a very different footing to the present. The following details, being a summary of Mr. Ansted's pamphlet, will be read with interest:—

Province.	District.	Beds.	Quality.	Analysis. Vol.mat.	Carbon.	Earthy Matter.
Bengal	Burdwan	Several, 9 and 7 feet	.....	36	60	4
	Adji River	6 to 13½ feet	——	—	—	—
	Rajmahal	Not stated	——	—	—	—
Lower Assam	Kurribari	Not traced	Brown coal	50	40·6	9·4
				70	25·4	4·6
Silhet	Garrow Hills	Undefined	(Byrung Ponjo) excellent coal	34	65·4	1·5
	Cherra	Several, 2 to 28 feet	——	—	—	—
Upper Assam	Namsong	6 feet	Very good	—	—	—
	Suffry	Up to 12 yards	——	—	—	—
	Boorhath	6 to 8 feet	Caking coal	45	52·7	2·3
	Jeypore	2 to 9 feet	Superior	48	46·2	5·8
	Namroop	Up to 20 feet	——	—	—	—
Behar	Palamow	Several beds to 6 feet	Slate coal	44	50	6
			Slaty crop	32	58	10
			Ditto ditto	25	63	12
Central districts	Ramgurh	3 feet	Promising	31	53	16
				27	61	12
	Ruttenpore	Immense thickness ?	——	—	—	—
	Surgooja	Many yards	——	—	—	—
	Singrowlie	Thin	Middling	54	32·2	13·8
	Sohajepore	Not described	——	—	—	—
Nerbudda Val.	Gurrawarra	Up to 40 feet	——	—	—	—
	Shawpore	2 to 6 feet	——	—	—	—
	Jubbulpore	Undescribed	Excellent	50	47·1	2·9
Tenasserim	Merguc	About 6 feet	Caking	55	40	5
Arracan	Ramree	Thin seams	Caking coal	36	49	15
	Cheduba	Thin seams	Infer. Cannel coal	46·8	41·2	12
Guzerat	Cutch	Many thin seams	——	—	—	—

Our attention has, within the past few weeks, been directed to the working of mines in Cornwall and Devon, by London adventurers, or rather, we might say, to the absence of that energy and application, whether of capital or labour, combined with science, which is so essential fairly to prove them. It is only by actively prosecuting the workings, and by developing the mineral resources in the several setts, that more extensive workings can be contemplated—at the same time, that such would, from the discoveries made, necessarily tend to afford encouragement, and thus advance the mining interest. It was only last week that we had occasion to refer to the proceedings at a meeting, where the absence of common prudence and ordinary caution being observed, subjected the adventurers to a loss of some 400*l.* or 500*l.*—such was the consequence of the acts, or negligence, of a London committee. Again, this week, on looking over the reports, it will be seen that, in more instances than one, there has been an evident neglect on the part of the body of adventurers, or those whom they may depute to act on their behalf, in working, or, as we have before observed, neglecting to work, the mines, with a view to their continuance. Simply, then, referring to the reports, we may observe, that, in one instance, nearly 7000*l.* has been expended, and not one inch of ground sunk (although the engine is at work), or even a cross-cut driven 10 fms. from the engine-shaft, to take the parallel lodes, two of which are within 20 fathoms of the main lode. In another instance, we have 4000*l.* expended, and nothing virtually done—the mine suspended—while the engine sent down from London, lying at surface, must, in all probability, be again brought hither, to find a purchaser; for, without prejudice on the part of those in Devon and Cornwall, conversant with mining and machinery, or, we might even say, the veriest *tyro*, there can be no question but that "One and All" will agree we are not equal to the engineers and founders in the two counties, as regards the manufacture or application of steam-engines. If such were the case, it might be asked, why should we erect Cornish engines to supply the metropolis with water at the East London Water-Works, at those erected near Kew-bridge and Vauxhall, or how is it that the Lake of Haarlem is drained with Cornish engines of 130-in. to 140-in. cylinders? We cannot but feel, that while such errors are committed, and omissions observed by those who undertake the performance of a duty to which they are either incompetent, or their avocations will not permit them to attend, there is but little chance for the *bonâ fide* adventurer, or the honest miner. We have hastily thrown together these remarks, as applying too generally to London management, although we are happy to say there are exceptions—yet such are but as "exceptions to the general rule;" while we trust that the non-success of certain mining companies will not have the effect of impressing the capitalist with the opinion, or conviction, that the want of success is attendant on the non-productiveness of the mine—whereas, it is really and virtually attributed to bad (or want of) management.

The prospects of the Blaenavon Iron and Coal Company appear to be more cheering than heretofore. It will be seen, from a report of the meeting of yesterday, in another column, that, in addition to the dividend in February last, another was payable in the autumn. Out of the large net profit of the past year, the losses of former years, and other engagements, had been expunged, which now enabled the directors to start fair, and run the gauntlet with other companies.

PROGRESS OF FRENCH MINING INDUSTRY.

[FROM OUR PARIS CORRESPONDENT.]

The new Customs' Bill has been discussed in what are called the *bureaux* of the Chamber of Deputies, and a committee has been nominated to report on it to the Chamber. The Members composing the committee are, for the most part, favourable to the bill. The iron interest, however, seems determined to make a stand against it. M. Talabot, of the great iron-works in the south of France, declaimed violently against any meddling with the iron duties, even in favour of the mercantile navy. He is son-in-law of the present Minister of Commerce, and this precious Minister did all he could to get him elected on the committee; but the Deputies had the good sense to reject him. This proceeding of the Minister will show you that he is prepared to go all lengths with the iron monopolists. It will show you, too, how hugely iniquitous the iron monopoly must be, when even this man feels himself constrained to rescue the mercantile navy from its odious gripe.

The precise period at which the bill will come under discussion in the Chamber cannot be fixed; but come when it will, there is no doubt that M. Léon Faucher, or some other intelligent Deputy, will take advantage of it, to place before the country a faithful account of the iron monopoly, in order that the people may see that they are victimised and robbed by the ironmasters. I think it may be assumed, that the measure will pass without alteration. As to its effects, I still entertain the opinion expressed in my last—viz.: that it will lead to so large an exportation of sheet-iron, as to make it a measure of considerable importance to the manufacturers of that article in England. The Minister of Commerce, however, professes to believe that the importations will not be extensive; but your contemporary, the *Journal des Chemins de Fer*, does justice upon the declaration, by asking, if that it be true, of what use the bill will be?

A new company, with a capital of 8,000,000 fr., is now in course of formation, under the title *Société des Houilleres et Hauts Fourneaux du Gard*, for working the mineral wealth of part of the basin called La Cèze.

The St. Dizier letter of the 15th says—"Quotations show no great changes in prices. The demands are unimportant in quantity, and few in number. There is stagnation in the business of all the iron establishments. *Fers laminés* are at 380 fr. to 390 fr.; the *fers battus à la houille*, 380 fr. for Paris—390 fr. for the provinces; *essieux bruts*, 385 to 390 fr.; *essieux etampés*, 410 fr. to 415 fr.; *bandages percés*, 410 fr. to 415 fr.; *fils de fer*, 5 fr. 20 c. The *fontes blanches*, delivered at St. Dizier, are 187½ fr.; the same delivered at Gray, 205 fr.; but the cost of conveyance being 18 fr., the prices are the same at both places." At Paris, the transactions in iron are unimportant; and this has some effect on the prices of St. Dizier.

The *Journal des Chemins de Fer* states, in its article on mining matters, that zinc has been discovered in the department de l'Isère, and that it is of very superior quality. The same journal states, that the Company of the Coal-Pits of the Ardenoises, have determined selling off the pits. The upset price is 32,000*l.* I learn, too, that several other coal mines, and some iron establishments, are in the market; but none of them are of great importance.

The Paris and Lyons Railway Company held its annual meeting yesterday. It was stated, that the directors intended to demand a prolongation of the concession from the Government—they having found that the calculations of the cost of forming the line, as made by the Government engineers, are enormously less than they ought to be. These gentlemen estimated that 200,000,000 fr., or 8,000,000*l.* would be sufficient; but it is found that 12,000,000*l.* will be necessary. There can be no doubt that the Government will accede to the demand of the company. The total receipts of the company up to 31st of December were 79,665,218 fr. 60 c.—of which 26,376,160 fr. 63 c. have been disbursed, 16,000,000 fr. have been deposited as caution money in the hands of the Government, and 37,289,057 fr. 97 c. remain in hand. Orders have been given for the construction of 125 locomotives, and a great number of carriages; and the works are to be pushed forward with great activity. Not fewer than 90,000 shares in this important railway are held by Englishmen.

Although the *Mining Journal* has announced the opening of the atmospheric branch of the St. Germain Railway, it must not be supposed that the embranchment is entirely completed. Half the length of *one* line is only actually in operation. The ironmasters have not yet been able to deliver the tubes required for the other.

The Messrs. Schneider, the eminent ironmasters and machine manufacturers, have been condemned to pay 113,000 fr. as damages to the Northern Railway Company for delay in delivering the locomotives they had contracted to supply. The same railway company has brought an action against the ironmasters for neglecting to deliver rails, &c., in due time.

I have before referred to the number of companies that are springing up for the working of mines in different foreign countries. One of the last is formed for working a silver mine at Arcerola, in Spain. The prospectus declares that its principal vein is equal to the celebrated Veta Grande of Zacatecas; but will anybody who knows anything of mining matters be fool enough to believe such a thing?—*Paris, Tuesday.*

Belgium.—On the 27th of February, a violent explosion took place in a coal-pit at Herstal, in consequence of which, three horses had to be abandoned at the bottom of the pit. It was thought that they were dead; but *eleven days* after they were discovered alive, having had no food during all that time. They manifested great joy on seeing a light, and a few days after were quite recovered.

NEW PATENTS.

A. V. Newton, Chancery-lane, Middlesex, mechanical draughtsman, for improved apparatus to be applied to steam-boilers. (Being a communication).

S. White, Winchester-row, New-road, Marylebone, Middlesex, for a new means of producing gas, both as to apparatus and materials, from which the gas is produced.

G. H. Palmer, Surrey-square, Old Kent-road, civil engineer, for an improved method or mode of producing inflammable gases of greater purity and higher illuminating power than those in use; and also, in the arrangement of the apparatus employed for the purpose, and which apparatus may be applied to other similar purposes.

J. Woods, Bucklersbury, engineer, for certain improvements in springs for supporting heavy bodies, and resisting sudden and continuous pressure.

S. Kenrick, Handsworth, Stafford, ironmaster, for certain improvements in preparing or forming moulds for casting metal.

G. W. Rowley, Welbeck-street, Cavendish-square, for improvements in the construction of carriages, and in apparatus to be used with omnibuses and other carriages.

T. Brown, Muscovy-court, Tower-hill, London, for improvements in machinery for raising and lowering weights. (Being a communication.)

J. Walker, Crooked-lane, London, for improvements in certain hydraulic and pneumatic machines, and in the application of steam or other power thereto.

Discovery of New Deposits of Sulphur.—A letter has been received from the British Consul at Owhyee—one of the Sandwich Islands—by the Board of Trade, and forwarded to Lloyds, recording the discovery of large deposits of sulphur in that island, at a distance of only 26 miles from a shipping port. These islands have most probably been the seat of extensive volcanic action at a former period—and hence it was natural to suppose that sulphur would exist in them. We hope it will increase the commerce and comforts of the natives and settlers there.

Messrs. Schneider and Co., of Creuzot, perhaps the most famous ironmasters in France, particularly for the manufacture of steam-engines, are likely to obtain the concession of the mines of iron ore in the department of the Allier.

DUTY ON FOREIGN ORES.

A numerous and influential deputation of Members of Parliament, and gentlemen connected with the export trade to South America, and also of the importers of copper ores, and of British smelters and manufacturers, had an interview, on Thursday, with Lord John Russell, and the Chancellor of the Exchequer, on the subject of the duty on foreign copper ores.

Several members of the deputation made statements showing the impolicy of the present law, and its injurious effects on important interests at home, as well as encouragement to smelt abroad. We believe no pledge was given by the Minister that the duty should be remitted. There cannot be a doubt, however, but that, ere long, this will be the case, since the Chancellor of the Exchequer appeared to view the question as important, chiefly on account of what it contributes to the revenue.

We subjoin a list of the deputation:—

Lord Viscount Sandon, M.P.	Hon. C. P. Villiers, M.P.
Sir Howard Douglas, M.P.	Thomas Thornely, Esq., M.P.
James Pattison, Esq., M.P.	G. F. Munts, Esq., M.P.
John Masterman, Esq., M.P.	J. H. Vivian, Esq., M.P.
E. B. Denison, Esq., M.P.	David Morris, Esq. M.P.
William Brown, Esq., M.P.	
LIVERPOOL.	
Mr. Brownell	Mr. Lockett, Chairman of the Ship-owners' Association
Mr. Boardman	
Mr. Keates	Mr. Imrie
Mr. Todd Naylor	Mr. George Brownell
Mr. Bibby	Mr. Nicholson
Mr. Budd	Mr. James
LONDON.	
Sir John Pirie, Bart.	G. F. Younge, Esq.
C. P. Grenfell, Esq.	P. C. Leckie, Esq.
Jos. R. Templeman, Esq.	Alex. Druce, Esq.
William Gibbs, Esq.	
MANCHESTER.	
Mr. Bailey, President of the Chamber of Commerce	Mr. H. Ashworth
	Mr. Vincent Potter
SHEFFIELD.	
Mr. Turton, Ald., and master cutler	Mr. Dixon, for the Mayor
WOLVERHAMPTON.	
Mr. Rogers	
BIRMINGHAM	
Was represented by Mr. Munts.	

THE COPPER TRADE QUESTION.

The select committee of the House of Commons appointed to enquire into the operation of the Navigation Laws, met on Tuesday last, to hear evidence of their effect on the importation of copper ore. There were present—Mr. Milner Gibson, chairman; Mr. Ricardo, the Hon. W. Liddell, Sir Howard Douglas, Sir George Clerk, Mr. Hume, Mr. Lyall, Admiral Dundas, Mr. Mitchell, Sir R. Peel, Alderman Thompson, and Mr. M'Carthy.

Mr. Ricardo called and examined

Mr. Boardman, who had been connected with South America for more than 20 years, in Chili and Peru. The trade of Chili consisted chiefly of the exportation of copper ore. There was an alteration of the terms of the admission of this ore in 1842, when the ore which had formerly been admitted only to be smelted in bond for re-exportation in a manufactured state, was then admitted for importation for home consumption, on payment of a duty, and the practice of smelting in bond was discontinued. Up to this time, the navigation laws did not operate against the article of copper; but they were now found to be a decided inconvenience, because, previous to 1842, the copper ore could be sent home in foreign vessels, but now they were obliged to be sent home in English vessels. This alteration had the effect of considerably diminishing the exports to England. He could give a recent instance of the way in which these laws affected his own house. They were anxious to send a cargo home to England, but they could not get one at a less freight than five guineas per ton; and they were, therefore, compelled to charter a Danish vessel to carry it to the United States, and the freight they charged was only at the rate of three guineas per ton—thus making a difference of two guineas in the freight, though the difference in the voyage was not more than from five to ten days. Previous to the imposition of the duty, there had been no exportation whatever to the United States; since then, the exportation had been considerable. Two smelting works had lately been erected in the United States—one in Boston, and one in Baltimore. By the last advices received from Chili, he understood that they could not get an English vessel to bring a cargo to Swansea for a freight of 4*l.* 10s. per ton; and, at the same time, there were some Danish vessels lying there for cargoes. This had often happened, and he had known their cargoes delayed for want of British ships as long as three months. South America consumed English manufactures to a considerable extent, and he did not think that the consumption had nearly reached its limits. He considered, however, that it was restricted by the quantity of South American produce which England might take in return. The consumption of American manufactures had considerably increased last year, which he could only account for by supposing that it arose from the facilities they had in getting returns. The consumption of English manufactures had not fallen off to the extent that the importation of copper ore into England had decreased, but he had no doubt that that would ultimately be the result. That consumption had, however, considerably fallen off, and he anticipated that it would fall off still more, so that in a few years he believed there would not be any importation of copper ore into England. The duty imposed on copper ore was about 1*l.* 10s. per ton, so that the differential freights caused by the navigation laws were higher than the duty itself.

By Mr. Hume.—There had previously been smelting works to a small extent in South America, but these had increased at least five-fold since the imposition of the duty. Coal was generally found at the places where copper ore was smelted. He was of opinion that if the navigation laws were continued, England would lose the smelting trade altogether.

By Sir H. Douglas—It was the imposition of the duty that had brought them into the present inconvenience, so that the present system was much worse than the old practice.

By Mr. Liddell.—The date of their employing the Danish vessel, to which he had referred, was in October or November last. He did not think that freights were then unusually high on the coast of Chili, though he admitted that the freights had been lower both before and since: he accounted for the cheapness of freight on board foreign vessels in this way—that it frequently happened that foreign vessels arrived upon the coast and had no return cargo; they were then very glad to take freights at 1*l.* or 2*l.* cheaper than English vessels. He did not know whether these freights paid them or not; but he knew they were, in such circumstances, very glad to get them.

Mr. Liddell: Then what benefits you injures the British shipowner?—Mr. Boardman: I do not go into that question.—Mr. Liddell: But I must.

By the Chairman—His house had made application to the Customs for a remission of the duty, but not for relief from the operation of the navigation laws. No advantage, to his knowledge, had ever been granted to foreign ships importing copper ore.

By Mr. Liddell—Copper ore could not be brought to this country in foreign ships for re-exportation; that was put an end to by the new tariff. Under the former practice it was allowed.

By Mr. Hume—He knew that in France and in the United States copper ore would be imported in ships of any countries. He did not know if the same system prevailed in Belgium—so that England differed from other countries both in its navigation laws and in its system of duties.—The next witness called was

Mr. Brownell, examined by Mr. Ricardo—He was engaged in the Liverpool and South American trade. As an importer of copper ores, he had frequently experienced difficulties in meeting with vessels that would bring the ores to this country, and in the differential freights which they had to pay. As they were not allowed to import these ores in foreign vessels, they were obliged to take the ores to Sweden or France, or the United States—thus seriously diminishing the means of getting returns for the British manufactures. Before the alteration of 1842, the majority of vessels importing copper ore were foreign vessels; of 11 vessels that his house had chartered in 1 year, 10 were foreign.

By Sir G. Clerk—British manufactures were chiefly exported in British bottoms; but the tonnage so employed must be insufficient to bring home the copper ore, because not only did all British vessels get return cargoes, but foreign vessels were also employed.

By Mr. Ricardo—In the first year after the imposition of the duty the quantity imported was 12,693 tons; while last year it was only 10,824 tons.

By Sir R. Peel—He would give the returns for all the years. In 1843 the importations were 12,693 tons; in 1844 it was 19,363; in 1845, 19,302; and in 1846, 10,824 tons. This was into the whole of the United Kingdom.

By Mr. Ricardo—He could give the returns previous to the alteration, from the year 1839. The quantity imported in that year was 12,993 tons; in 1840 it was 9133; in 1841, 10,819; and in 1842, 10,884. He accounted for the increase in 1843 and 1844 by the previous loans which had been made from this country to the Chilian miners. It was by British loans, in fact, that the Chilians were enabled to raise the ore. The repayment of these loans was necessarily a tedious operation; they were to a large amount, and they continued so down to the present time. It was the repayment of these loans that caused the great increase of exportation in the years he referred to. The importations, however, were now falling off; and when the loans were all repaid, he believed they should have no more copper from that country; but it would either be melted in Chili, or on the continent, or in the United States; but, while the importation of copper ore had fallen off, the importation of bar-copper had considerably increased. In 1843 there were only 127 tons of bar-copper exported from Chili; but, in 1844, when the new duty had begun to operate, the importation of bar-copper was 1401 tons; and it had very much increased since, so that there had lately been a public sale of 130 tons of copper in Liverpool—a thing that had never been known before. The authorities of Chili were giving every encouragement to the smelting of copper; they admitted coal free of duty—they had altered their laws, in order to admit British vessels for the importation of coal and the exportation of copper. There were other exports from South America—such as wool, guano, bark, nitrate of soda, and dyewoods; but he did not know how the navigation laws operated upon them. He was aware, however, that, in 1844, the Americans were able to undersell the English manufacturer in the South American markets—in long calicoes, domestics, and even in flannels. He was bound also to state, that South America was giving every encouragement to the trade with England.

By Sir H. Douglas—Of the two evils, of the duty imposed on the importation of copper, and of the difference of freight caused by the operation of the navigation laws, he thought that the imposition of the duty was the greater evil of the two—because this was a permanent evil, while the other was uncertain and fluctuating. In fact, a return to the old system previous to 1842, would remove the evil of which he complained to a considerable extent; to a certain degree it would remedy the evil; but, at the same time, he must state, that, as the Americans had commenced the practice of smelting, and as they would probably continue it, every day added to the difficulty of the subject. A repeal of the duty, he would repeat, would be more beneficial to them than an alteration of the navigation laws.

Sir R. Peel: But you have not explained the increase of importation in the two years of 1844 and 1845.—Mr. Brownell: It arose partly from the system of loans, as I formerly explained, and partly from the hope that the duty would be withdrawn. The merchants had an interview with Mr. Gladstone on the subject, who assured Lord Sandon that the measure was closely watched—that it was a mere experiment, and that they were willing to make such alterations as were necessary.—Sir R. Peel: Then if it arose from the wish to repay the loans, it was not from the natural demand of trade; in fact, more was imported than was required for the purposes of trade. Would not that account for the diminution of the exports next year?—Mr. Brownell did not account for the diminution in that way so much as by the increase of the Chilian manufacture of copper.

By Sir G. Clerk.—The freights were always rather higher in English than in foreign vessels. In 1840 the freights averaged about 4*l.* 16s. per ton; in 1841 they were 3*l.* 19s. 6d.; in 1842, 3*l.* 6s.; in 1843, 4*l.* 4s. In 1844, when the importation was exclusively confined to English vessels, the freights were 2*l.* 19s. 9d. For 1845 he had not the returns, but he believed they were pretty nearly the same. This year the freights were about five guineas. For the last 10 years, guano had been imported to a great extent from the Chilian coast, which, he thought, to some extent diminished the supply of vessels for importing copper ore, and to that extent raised the freights.

By Sir R. Peel.—The importation of copper ore is not from South America only, there is ore imported also from Cuba and South Australia.

By Mr. Mitchell.—In 1846 the average difference of freight between British and foreign vessels was about 2*l.* per ton. The decrease of freights in 1844, he thought, was caused by the uncertain state of things in the River Plate, which caused vessels to flock round to Chili and Peru.

By Mr. Liddell.—The loans to which he had formerly alluded, had been given for a long series of years—in fact, ever since there had been an importation of copper ore into this country; and these loans were still continued from time to time. There had always been returns made for the repayment of this money, but so much was not required up to the period of the imposition of the duty. The value of a ton of copper ore was about 18*l.* 5s.; and out of that sum there were charges for freights, land-carriage, &c., to the extent of about 11*l.*; and to this there was now to be added the duty of 1*l.* 11s. 6d. per ton; so that all that remained to the Chilian miner, after all these charges were paid, was 5*l.* 12s. 6d.—The next witness called was

Mr. Budd, examined by Mr. Ricardo—He was a copper smelter at Swansea and Liverpool. He had very large smelting-works, consuming coals to the extent of 2500 tons per week. The trade in smelting had considerably fallen off since the alteration of the tariff in 1842, when a duty was, for the first time imposed, on the importation of copper ore. The consumption of copper throughout the world had very largely increased in that time, though the smelting trade had diminished in England. Up to 1843, there had been a great increase in the smelting trade in England, but now, as he had said, there had been a considerable decrease, which he could only attribute to the falling off in the foreign trade, as there had been no falling off in the home trade. Previous to the alteration of 1842, there were very few smelting-works out of England—in fact, with the exception of a few works in Norway and Sweden, constructed where the ore was raised, and smelted with wood, the trade was entirely confined to this country. There had formerly been some smelting-works in Russia, the copper of which was exported to France—in fact, there had at one time been an exportation of 6000 tons from Russia to France; but when the copper ore was smelted in bond, and re-exported, the English smelters had driven the Russians out of the French market, though they were now likely to be driven out in their turn. There were now smelting establishments in South America, the United States, and in France, which took altogether a particular species of ore from Bolivia that required little fuel and little labour. In these establishments the ore was smelted with English coal: there were smelting-works now erecting at Hamburgh, which he believed would be worked with English coal. English coal was cheaper at Hamburgh than it was in the neighbourhood of London. At this moment there was not a sufficient supply of copper for the use of the manufacturers. He attributed this to the increase in the demand, while the supply had not increased, and particularly as the supply was always short in time of winter. The scarcity was so great that the price of copper had risen 10*l.* per ton since the month of February last. As far as his knowledge went, the freights in British vessels had been lower since the navigation laws had come into operation, by the alteration of the tariff, than they had been before. He accounted for this by the fact that numerous vessels had brought cargoes which had gone to Chili in ballast, which proved, he thought, that these vessels had gone to Chili, being attracted thither by rumours of high freights, and had thus overstocked the markets.

By Alderman Thompson—The navigation laws had deprived foreign ships of all means of obtaining return freights from the west coast of South America in copper ore, so that to America, Sweden, Hamburgh, &c., the freights were less than to this country. The freights from Cuba, he believed, had been reduced since 1842.

By Sir G. Clerk—He thought Mr. Brownell had fallen into a misapprehension, in stating the amount of importation in 1842. The returns published for that year only comprised six months, and he took it for 12 months.

The committee then adjourned.

The select committee resumed their sittings on Thursday. There were present, Mr. Milner Gibson, chairman; Mr. Ricardo, Hon. Mr. Liddell, Sir George Clerk, Sir Howard Douglas, Admiral Dundas, Mr. Lyall, Mr. Thomas Baring, Mr. Hume, Mr. Bright, Alderman Thompson, Mr. Liddell, Sir Robert Peel, and the Hon. Mr. Villiers.

Mr. Budd (who was under examination on Tuesday) was recalled, and examined by Mr. Liddell. As a smelter of copper ore in this country, he decidedly preferred the old condition of the law admitting copper ore, to the present system. If an alteration were made in the law, so as to admit the ore duty free, if they were only admitted in British vessels, he would still have to complain of the navigation laws. With regard to the smelting of copper in South America, he was of opinion that they could not smelt there so cheaply as in this country, because they had no coal or labour, nor had they the necessary commercial arrangements. In the United States there was no difficulty in obtaining coal or labour, or in making the necessary commercial arrangements; but still they could not compete with England if there were no duty and no navigation laws, because they could not compete with us in coal. The bituminous coal in Pennsylvania is 200 miles from the coast, whereas the English coal is not more than a mile from the coast. The difference of freight in favour of the United States as compared with this country, was more than 2*l.* per ton. He had no facts to go upon in estimating what the freights would be in case the navigation laws were repealed; but he should think the freights would still be slightly in favour of the United States. If the alternative were given him, whether the duty should be removed, or the navigation laws repealed, he should certainly prefer the removal of the duty. If both were repealed, he had no doubt whatever that the English smelters would beat the world.

By Mr. Ricardo.—As a practical smelter, he found it better to bring the ores to the fuel, than to bring the fuel to the ores.

By Mr. Liddell.—If the former state of the law were restored, with the exception of greater facilities being given to the manufacture of copper bolts and copper sheathing from foreign ores, he thought the copper smelters would be satisfied, as being a removal of all restrictions on their trade.

Sir R. Peel.—Supposing the duty were removed, would there be an increase in the imports?—Mr. Budd: I think so.—Sir R. Peel: Suppose the navigation laws were to oppose obstacles to the importation of copper ores, should you not then complain of the operation of the navigation laws?—Mr. Budd: undoubtedly.—Sir. R. Peel: And therefore you wish such an alteration in the navigation laws, as would allow vessels of all countries to import copper ores?—Mr. Budd: certainly; and for this reason, that the operation of the navigation laws had this effect, that it left upon the west coast of South America a number of ships belonging to the United States, to Hamburgh, to Sweden, &c., which could get no back freights; and those ships were induced to take cargoes at any rate of freight, and to any part of the world. The effect of this was, that other countries received the copper ores cheaper than England did; for he begged to state that the amount of freight was not in itself of importance, so much as the question—how much they had to pay compared with other countries.

By Mr. Mitchell.—The differential freight caused by the navigation laws, amounted to 10 per cent. on the cost of the copper.

By Mr. Baring.—He had no doubt that United States' ships would prefer a cargo home, to one to this country.

By Sir R. Peel.—That was an additional reason for making the navigation free.

By Alderman Thompson.—He did not think that copper ores required ships built for the purpose. He knew that the ores were imported from Cuba in ships of a particular build; but he had himself imported, under the former state of the law, copper ore in ships of almost all nations; and he did not think that those ships would all have been built for the special purpose of importing copper ores.

By Sir R. Peel.—If particular ships were required for the Cuba trade, and if those ships were built in England, that was of course for the advantage of the English shipbuilders; and if foreigners built ships of the same class, that would make for the advantage of the ore importers. He had to complain that English captains frequently overloaded their vessels, and had to put back on that account—this rarely happened to foreign captains.

The committee then proceeded with the examination of Mr. Swale, whose evidence referred more particularly to the wool trade, and shipping, when they adjourned.

A FEW FACTS CONNECTED WITH THE COPPER TRADE.

Copper Ore is the only raw material imported for manufacture subject to duty.

Copper Ore is almost the only natural product possessed by Chili, of which it can avail in payment for British manufactures.

Copper Ore was imported free in bond for smelting and re-exportation previous to 1842, when a duty was levied, but avowedly as an experiment.

Copper Ore from Chili, and other foreign countries, was almost exclusively smelted in Great Britain, previous to 1842.

Copper Ore from Chili is subject to an expense in transit to England, of about 25 per cent., and to that extent British mines must always naturally be protected.

Copper Ore, previous to 1842, was imported in foreign ships, since that period British vessels alone can convey it to this country; the cost of freight is thereby greatly enhanced.

Copper Ore smelting had nearly ceased in Chili previous to 1842, when the duty was imposed in Great Britain.

Copper Ore smelting is resumed in Chili, is especially encouraged by the Government, and is increasing.

Copper Ore smelting was unknown in the United States previous to 1842.

Copper Ore smelting has been actively commenced in the United States, and is increasing in the vicinity of the coal districts, where that mineral is abundant and cheap.

Copper Ore is now sent from Chili, to be smelted in Sweden, which never occurred previous to 1842.

Copper Ore duties fell off 16,200*l.*, or 21 per cent., in the past year, and are still decreasing.

Copper Ores afford very extensive and profitable employment for British shipping, to the extent of about 60,000 tons annually, in its conveyance from Chili and other countries.

Copper Ores afford the principal return cargoes for British ships, without them they would have often to come in ballast from Chili.

Copper Ore, being a raw material used in manufacture, is justly entitled to be admitted duty free on the principle last laid down, and acted upon by the late and present Government.

Copper is now sent to this country and to France in large quantities, instead of copper ores, which are smelted and converted into copper in Chili.

Copper so imported is not consumed in Great Britain, but is exported to the continent, and to India—markets hitherto supplied by Great Britain.

Chili has for years been an extensive and increasing consumer of British goods.

Chili is not a manufacturing country, but is at present chiefly supplied with manufactured goods by Great Britain, for which it has principally paid in copper ores.

Chili has felt the imposition of a heavy duty upon its chief produce, as a hostile procedure, and has met it by granting exemptions from duties, and bonuses to encourage smelting at home.

Chili contains and produces abundance of coal in the province of Conception.

Chili admits even foreign coals, duty free, for smelting purposes, in its remote provinces.

Chili is at present supplied with manufactured goods by the United States, Belgium, and other countries, to a considerable extent, and there will be still greater competition with England by these countries, if they can procure copper ores as returns and as back freights.

The interests of the British merchant, of the British manufacturer, of the British shipowner, of the British copper trade, and of the population dependant thereupon, demand the immediate abolition of this duty.

GUN-COTTON.

From the interest which attaches to authentic particulars of experiments with this new power, we are pleased to announce, that we shall be enabled to place before our readers reports of trials in all parts of the country, and from a source which will remove all doubt of accuracy in description or detail. Annexed is the first of a series of promised communications, which we shall publish as frequently as received:—

Sir,—I beg to enclose you my report in blasting gun-cotton against gunpowder, in the Geeston cutting, now making for the Syston and Peterborough Railway, near Stamford. The several experiments were conducted with every principle of fairness, in the presence of Mr. Grafton, Mr. Birnie, the resident engineer of that portion of the line, and several gentlemen living in the neighbourhood.

I wish to remark, in placing these trials before you in a tabular form, that the cutting in which they were made, is through a hard freestone foundation; the entire depth of the cutting at this part is about 28 feet, the upper portion of which is composed of clay and a loose rubble, under which lie beds of freestone, varying in thickness. The thickness of the layer upon which these experiments were made, is about five feet. It was greatly to be regretted, that the character of the ground was such, as not to allow me to test the powers of gun-cotton on a more extensive scale: you will see that they are all small charges, still the results were most satisfactory to every person present; and none were more convinced of its superiority over gunpowder than the men engaged upon the work. The cubical quantity of the stone heaved and removed by the several explosions, was in many instances estimated by Mr. Birnie, the engineer present, who took a very lively interest in the matter, and who appeared highly gratified at the advantages derivable from the use of gun-cotton in all operations where blasting is essential.

These experiments show that the average powers of the patent gun-cotton in blasting, is proved to be in the proportion of one of gun-cotton to six of gunpowder; so that where six holes are necessary when powder is used, only one hole is necessary when the gun-cotton is substituted, whereby a great saving of time, labour, and expense in all blasting operations, whether in open cuttings, tunnels, or deep mines, is effected, and proves the invention of gun-cotton to be invaluable.—John F. Wheeler.

Stamford Hotel, Stamford, April 21.

TABLE OF EXPERIMENTS, &c

No. of Expts.	Proportion.	Weight of Gun-cotton in ounces.	Weight of Gunpowder in ounces.	Depth of Hole.	Diameter of Hole.	Number of cubic feet of Stone Removed.	Weight of the Stone Removed.
1	4 to 1	.....	8 ounces	3 feet.	2 inches	80 cubic feet.	6 tons.
2	1 to 4	Loose ..... 2 ozs.	.....	3 feet.	2 "	135 " "	10 tons nearly.
3	1 to 4	Ditto ..... 2 "	.....	2 ft. 9 in.	2 "	106 " "	8 tons.
4	1 to 2	In paper tubes ..... 4 "	.....	3 ft. 9 in.	2 "	320 " "	24 tons nearly.
5	1 to 2½	Ditto ..... 3 "	.....	3 feet.	1½ "	180 " "	14 tons.
6	8 to 1	.....	11 ounces.	1 ft. 8 in.	1½ inch	40 cubic feet.	3 tons.
7	{nearly 1 to 8}	In paper tubes ..... 1½ oz.	.....	1 ft. 8 in.	1½ "	34 " "	2½ tons.
8	.....	Loose ..... 1 "	.....	1 foot.	1½ "	19 " "	1½ tons.
9	.....	Ditto ..... 1 "	.....	1 foot.	1½ "	———	———
10	.....	Ditto ..... 1 "	.....	1 foot.	1½ "	———	———

The above proportions of gunpowder and gun-cotton were tried in the Geeston cutting, near Stamford, being a part of the Syston and Peterborough line, now in progress.

Improvements in the Manufacture of Gas.—Gas, for the general purposes of artificial illumination, having now become one of the real necessaries of life, any improvements in its quality, or greater economy in its production, must be of the greatest importance to society at large. We are led to these remarks by having before us the prospectus of a new gas company, under the title of "The Cardinal and Central Gas-Light, Ventilation, Animal Charcoal, and Carbonaceous Manure Company," formed for the introduction to public utility of a new, cheap, and efficient method of manufacturing gas from sources hitherto unproductive—for a more efficient mode of warming and cooling apartments—for a new system of ventilation—for a new preparation of animal charcoal of superior quality—which, having been employed on various chemico-economical operations, will form a highly-superior manure to any now in general use. The most novel feature in the formation of this company is, the privilege to be granted to the customer of changing the present mode of lighting at so much per 1000 ft., to "such an illuminative power, at so much per quarter, to be estimated, by the size of the room to be lighted, by every 100 cubic feet of space, which will be accomplished at *one-third* the present charge." The prospectus states, that from the value of the remains in the retorts, and their improvements in the manufacture, a superior illuminative gas can be produced by them at 4s. per 1000 ft. These advantages are obtained from the use of one-fourth bones to three-fourths of coal; and the substances obtained from this system are—grain black for the sugar refiner; flake black for the japanner, currier, &c.; ivory black; coke from the coke-ovens and retorts; limpid naptha; the ammoniacal salts; sal-ammoniac and sal-volatile; bone earth, used in the manufacture of porcelain; carbonaceous manure; and a large volume of rich gas, at the rate of 7000 ft. for every ton of bones calcined. The patentee of this new, and apparently economic and elegant system, is a gentleman who was many years a pupil of Dalton, the celebrated originator of the theory of atomic chemistry, and also of Berzelius; and has founded his system on true chemical principles, and on the law of luminous bodies, as laid down by Davy, Sir J. Leslie, and other eminent men; and, when carried out, will, no doubt, obtain great support from its purity and economy—it being, as stated by the patentee, free from those exhalations so injurious to paintings and decorations. The capital is to be 750,000*l.*, in 75,000 shares, of 10*l.* each.

London and York Railway Preliminary Expenses.—The preliminary expenses of this railway amounted to no less than 432,620*l.*; the preliminary expenses of passing the bill for the Direct Northern Railway were 128,414*l.*; and the expenses of the London and York Extension were 309,206*l.*—making, in the whole, 432,620*l.*

Original Correspondence.

HYPOTHESES ON IRON.

Sir,—I wish a few more remarks on those discoveries, in which Mr. R Mushet is anxious to take a precedence, which no one will be anxious to dispute with him. The soil of his ingenuity is too fertile to reap the whole crop in one harvest. His statement is in effect, that whilst others take materials their localities furnish, and make different qualities of iron, and in cases of extreme peculiarity fail to make it at all, Mr. R. Mushet has a key to the whole matter, producing exactly what he likes. His team of earths is well up in hand, and he drives them at pleasure right through any part of the blast furnace. Let him explain the details of the operation—five earths are named, but the action only of two explained—the oxides of calcium and aluminum, the turgon and diaphorus of the blast furnace. These members of faculty proceed *selon les regles*. The first assertion is generally, that the earths *deoxidate each other*. What! are these the cats of Kilkenny which devoured each other, until the remainder was their tails? But, says the authority, the peroxide of calcium deoxidates, &c., the sesquioxide of aluminum. Where is the mutual deoxidation? But Mr. R. Mushet informs us, the alloy of aluminum is the most prejudicial, and hints that calcium must correct it. How? The greater the quantity of lime introduced, the *less* must be its effects on the iron; because, while it deoxidates the noxious alumina, it increases in its own oxidation, aggravating the alloy of the former, and making an alloy of the latter impossible. In what manner the oxides, either of aluminum, calcium, or the other earths, become *metallic*, deponent doth not say—neither if the barium and magnesium effect a *mutual* deoxidation of the same sort; nor is anything narrated on the effects of the silica.

If we look back on these scenes of phantasmagoria, we shall perceive that, in the first instance, Mr. R. Mushet asserted the earths were deoxidated by the carbon; and he calculated the volume of carbon which disappeared in the act. When I had pointed out the impossibility of the metalloids, if they were produced above, surviving a descent, with streams of oxygen pouring upon them, the subject was dropped. Now, after six months' "deep study," there is a new explanation, that the deoxidation is *after* they have passed the blast, and are lodged snugly in the hearth beneath. But how they become purely metallic, either in the iron, or, as asserted, in the flowing cinder, is not explained—the whole process being resolved into the production of two substances, which, by the best authorities, have no chemical existence. *Sic transit gloria*—surely a most lame and impotent conclusion to a mighty matter. The rigidity of adherence in Mr. R. Mushet to old errors, with equally remarkable facility in committing new, lead me to designate the performances of this eminent *voltigeur* the cataleptic somersets.

The alloys of potash and calcium, by charcoal and peat, are laid down with as much precision as anything else. But, in the first place, experience of peat iron is so limited, that it is impossible to class it with charcoal iron, an established product. In the next place, no two ashes differ more than those of charcoal and peat. Peat contains even more sulphuret of lime *in general* than the ashes of pit coal, and all sulphurets are most noxious. Peat also contains a very large quantity of alumina, an earth which does not exist in plants—it is not one of their components. This assertion, therefore, respecting charcoal and peat iron, is just as fanciful and accidental as anything else, and to be supported, no doubt, by the same evidence as the peroxide of calcium—viz.: that "without it it will be impossible to account," &c. The real action of the alkaline earths in the blast furnace Mr. R. Mushet does not seem to be aware of, that by forming silicates with the silicic acid, they neutralise its powerful affinity for iron. The greater facilities in the process of fusion, afforded by the argillaceous ironstone, arises, most probably, from the addition of the alkalies to the alkaline earths. Wherever alumina is present in primitive or secondary rocks, or disintegrated strata, or in compound with lime, it has been ascertained the alkalies universally attend it far more than in any situation. The fusible schistose fluxes, lying under or with coal seams, contain potash in large quantities, while its rare absence constitutes the fire clay.

I have not leisure this week to offer explanations, which Mr. Mitchell's letter demands; but, in the meanwhile, the following points may prove elucidatory. Mr. Mitchell's view is, that cast-iron, steel, &c., are alloys of changing quantities of iron with a definite carburet. What, then, is the constitution of this carburet? Is it one of those two, quoted on the authority of Berzelius? and, if so, is the carburet, which forms *part* of the carbon in grey-iron, the *same* carburet as that existing in white-iron; or is it the *second*, with a different arrangement of equivalents? When it is considered, that the views I have been advancing, as *apparently* contradictory to the facts of analysis, are not my own—but are the theories by which the processes of manufacture, so far as Science has entered there, have been explained for half a century—it will be admitted, that a more interesting correspondence can hardly find a place in your Journal.—Ferreus: *April* 21.

MANUFACTURE OF IRON.

Sir,—In reply to "Scrutator," I have not heard of steam being admitted in the blast furnace above the point of fusion. A gentlemen, whose name I cannot recollect, on the eastern border of the principality, tried the admission of air in the upper part. If he does not wish to decompose his water, but only to damp his materials, would not a little water run in at the top perform as well? "Scrutator" certainly may congratulate himself on advancing what he modestly entitles his "crude notions;" for he has called out a correspondence, which threatens to revise the whole code of ironmaking. I think "Scrutator" has made a slight error, where he attributes, if I understand him right, the *transparency* of the glass of the blast furnace to the *presence of iron*. There is no question that, as he states, his process of ventilation may be improved; but, were I "Scrutator," and had fairly got the rascal in the bag, I would not let him off so easily.

Gloucester, April 21. David Mushet, Jun.

ON HEAT AND COMBUSTION.

Sir,—I addressed a few remarks to you on the subject of combustion and heat, which you were good enough to publish in the Journal of the 10th inst. I take the liberty of sending at this time a few observations upon a peculiarity attending the use of the water grate, referred to in my letter of the 5th inst.; I candidly confess that I neither contemplated nor foresaw at the time I contrived the grate this peculiarity, upon which, in a great measure, depends that complete and total consumption of fuel which we have been enabled to attain. The pieces of fuel resting immediately upon the grate bars do not burn away, in consequence of the coolness of the bars, and the direct action of the vapour of water—they thus form a bed for the highly ignited fuel above, retaining the small pieces until they burn entirely away, or are reduced to minute particles of incombustible earthy matter. When the coal contains much impurity, and pyrites present, clinker forms in the fire, but it never sets upon the grate, unless the supply of water should be neglected. No ash ever falls into the ash-pit, but when the fire is stirred, which it is necessary to do occasionally to clear it. With common fire grates the principal combustion is going on at the lowest part of the fire, and as the pieces of fuel become reduced in size, so as to pass through the spaces between the bars, they fall into the ash-pit, and much fuel is thus lost. With the worst coal which I have ever used once in six hours, is sufficient for stirring to clear the fire, when the small particles of ash fall into the ash-pit, and the clinker requires to be raked out by the fire-door. I have used coal, anthracite, so pure, that it was necessary to clear the fire only once in three days. As it will prove the justness of my remark that such coals should be regarded as a concentrated fuel, I will intrude a little upon your space to give a few particulars, which I have no doubt will be interesting to a portion of your readers. I had burnt 5 tons of coal in London, shipped at Llanelly, from a colliery situated at the head of the Ammon Valley, where the counties of Carmarthen and Glamorgan meet. Some short time after the proprietor was in London, arranging for the disposal of the property, and he wrote me, then in Lancashire, for my opinion of the coals, which I gave him. After this he sent me an analysis of the coal; and, as I happen to have his letter by me at this moment, I send a copy—the names, date, &c., may be satisfactory.

Gerard's Hall Hotel, Basing-lane, London, March 12, 1845.

Sir,—I received yours of the 4th inst. on Monday morning, for which I am much obliged. I beg to give you the result of an analysis of the coal, by R. Phillips, Esq.:—Carbon, 90·83; hydrogen, 3·38; nitrogen, ·96; oxygen, 2·33; silica-alumina, with traces of pyrites and common salt, 1·18; moisture, 1·32=100. I shall feel obliged by your giving an opinion of the above. Mr. Phillips reports it the very best he has ever tried. I have been obliged to send for a piece of it for Sir Henry De la Beche for the Museum.

To Mr. Leighton, Messrs. Schneider and Co., Ulverston. J. Jones.

By adding $\frac{1}{10}$ths of the moisture in the above to the carbon, we have upwards of 92 per cent. I have known specimens analysed, which have yielded between 95 and 96 per cent. of carbon. This coal is peculiarly adapted to steam navigation—it bears transports without injury—the weather does not affect it—and it will never ignite spontaneously. The pyrites of anthracite coal undergo no decomposition from the action of the weather, warmth, or moisture. Lumps are lying about old colliery workings unaltered, some of which may have been there for a century. It has always appeared to me, that a blast must answer much better on board a steamer in rough and stormy weather, than the draught of the funnel. When the vessel is rolling, or pitching much, the latter must be very variable and unsteady—the former will be always certain. By the use of a blast, the size of the funnel may be very much reduced; it will then be necessary only to carry off the heated gases, the products of combustion, so that the people on deck are not annoyed by them. This will ease a vessel very much, both of the strain of such a heavy mass in rolling, and its resistance to the vessel's way in a strong head wind. These funnels, in large steamers, are of great size. I recollect walking through part of the *Penelope's* funnel upright with my hat on; it was upwards of 7 ft. diameter. To give some idea of the saving in bulk which would attend the use of anthracite coal, I may state, that while in London, I determined, by careful trials, that, to perform a certain amount of work, with common fireplaces, 7½ tons of good Newcastle steam coal were used; and to do the same work with the patent grate, 4 tons only of anthracite were used—a saving of nearly one-half, or $\frac{7}{15}$ths. I always anticipated much difficulty in its introduction into steam-vessels; because, until its practicability had been most fully and satisfactorily demonstrated, it was not likely that a steamer would be sent to sea with so great a novelty—but in the iron-works located in the anthracite district, I certainly did not look for any opposition; I expected the plan would be hailed as a boon.

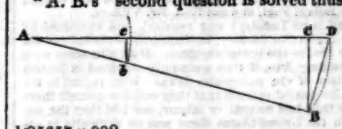
Llandebie, April 17. T. H. Leighton.

MINE SURVEYING.

Sir,—Seeing that your young readers are misguided by some of the modes of answer to "A. B.'s" problems, I have pleasure in furnishing further practical information thereon; and, in the first place, deprecate the use of logarithms for operations so trivial and short. Things of common sense, or ingenuity, being treated in such a way, are needlessly discouraging to the novice. 7° south of east, for 30 fathoms, give 3·656 fathoms; but "A. B." wants 36 links, or 3·96 fathoms more—then adding them, 3·96+3·656=7·616 fathoms.

Let the triangle A, *b*, *c*, represent the natural tabular numbers, and A, B, C, the triangle in question; then, by plain *Rule of Three*—A, mouth of adit; A, B=30 fathoms; A, *b*=1 fathom. If line A, B, 30 fathoms, give B, C, 7·615 fathoms, what will A, *b*, 1 fathom, give ?—$\frac{7{\cdot}616 \times 1}{30}$=·2538 fathoms, or 1 ft. 6·2736 in. for *b*, *c*, the sine, which in Budge's table falls between 14° 30′ and 14° 45′; or using the decimated sine 0·2538 in table of natural sines, we find it near enough to 14° 42′: hence, we drive thus much south of east. If "A. B." only wants 36 links in all, the 7·616 must be substituted by 3·96: then, if 30 fathoms give 3·96 fathoms, what will 1 fathom give?—3·96 × 1 ÷ 30 = ·132 fms.=9·504 in., which stands against 7° 35′ south of east—that is, by starting at first from the same adit's mouth.

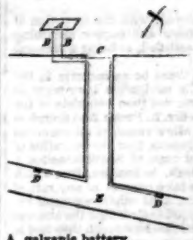
"A. B.'s" second question is solved thus:



∠ C, A, B = 1°
A, *b* = 1 fathom
A, B = 1 mile, or 880 fathoms
c, *b* = 1·25657 in., sine of 1°
If 1 fathom—1·25657 in.—888 fathoms.

$\frac{1{\cdot}25657 \times 880}{1}$ = 1105·7816 inches = 15 fms. 2 ft. 1¾ in. for C, B, the departure, or difference, southward, from which B, D, may be found, if desirable; but the difference between B, D, and B, C, is in this case unappreciable. For the assistance of young men, to comprehend the use of logarithms, I add that, in natural numbers, as above, the radius A, *b*, is to be regarded as unity, or 1·; whereas, by logarithms, they employ a radius of ten thousand millions, the logarithm of which is 10·, and the sine and cosine necessarily expressed by 9· and decimals.—A Mole: *Pool, April* 14.

ON THE FIRING OF DESTRUCTIVE GAS BY ELECTRICITY.



A, galvanic battery.
B, B, copper wire. C, the pit
D, D, tin cases with gun-cotton, or gunpowder
E, the level.

Sir,—Owing to the lamentable loss of lives, which have come to my notice, through the explosion of gas in coal mines, I have for a considerable time given it my serious consideration, and am induced to offer the following as the result. By the process, shown in annexed plan (the cost of which will not exceed 20*l*.), it can be acted on during the absence of the miners, at any time, and will be found a sure and safe remedy against such awful occurrences of the loss of so many lives. Should any mine proprietor be disposed to test the experiment, I should be happy to treat with him, to carry the same into operation.

J. Bath.

Smelting-works, Battersea, April 22.

ELECTRICITY IN MINE VENTILATION.

Sir,—In your paper of the 10th and 17th inst., some remarks on firing "carburetted hydrogen," by means of the "electric spark," so as to prevent, in a measure, the fearful accidents from explosions of "fire-damp" in our coal mines, have appeared. My object in writing is, to invite some of your *scientific correspondents* to consider this matter, as "J. M.," nor D. Mushet, jun., do not sufficiently explain it. The opinions of "Sir Humphrey Davy," and other eminent chemists, are, that it is impossible to fire "carburetted hydrogen" by means of electricity, or by even *red* or *white* heat, as actual *flame* is required to cause explosions. My opinion is, that a good mining system would obviate entirely the need of doubtful preventitives—thus, for example, if air or other conveniences are wanted in the *Cornish mines*, it is generally obtained for the miners' safety. Why not the same in Durham or Northumberland?—W.: *London, April* 21.

RICHARDSON'S REVERSING WATER-WHEEL.

Sir,—The letter of your correspondent, "R. Symons," in your last publication, induces me to mention a fact which I thought had been well known, that the reversing water-wheel, as described in more than one of your preceding Journals, was invented by the celebrated Smeaton, and applied by him, rather extensively, for the drawing of coals in this district. The last of these machines I recollect as being in use at Leafield Colliery, near Chester-le-Street, in the year 1812; soon after which it gave place, as its predecessors had previously done, to steam power. Here it had been invariably coupled with a pumping engine, to lift the water over and over again to the head of the wheel, owing to the want of a natural supply. I saw a similar machine at work in Wales as far back as 1802—then, I think, the only one. When the crank and reciprocating engine of Mr. Watt came into use, the water-wheel began to die off. The plan was, indeed, so common under Smeaton's extensive practice at one period, that I am persuaded it must be known to many of your readers.—T.: *Newcastle, April* 20.

ON THE VENTILATION OF COAL MINES.

Sir,—"Alpha" desires to know, if Mr. Russell, of Risca, would not have found it beneficial to have had three pits on his Risca fiery vein of coal? Before the fatal accident took place, and before I was called upon to view that colliery, Mr. Russell had been extending his underground workings towards the crop, with a view of communicating with an air pit which he had been getting down on the crop, to use as an upcast pit for his black vein coal; I should suppose he has accomplished his purpose some time since, and finds the benefit from it that he expected. I was much amused on reading Mr. W. Storey's calculations, relative to the probable saving that the introduction of his machine for working coal would effect. Mr. Editor, I thought the *saving* did not matter at all! If we had him now in this district, with a few hundreds of his machines, we would give him all the savings and a little more. The colliers at some of the works here will not get any coal; they are walking about the works that are going, with bags, begging, and say they will not work whilst they can get something in their bags; and, in the meantime, several of the blast-furnaces are blown out for want of coal. Here is a fine opportunity for Mr. Storey to set on his substitutes for the black jokers to work. I beg him to come here quickly. Let us try them before the bags go home empty. If he succeeds with his coal thrashers, he will put an end to colliery strikes the world over, and do the more respectable part of the colliers a deal of good—that class will not beg. It is quite another sort who go with their bags up and down the district; they do it willingly—nay, cheerfully—like it better a deal than work; and, I am sorry to say, they often overrule the better class of men. Do come, Mr. Storey; send a ship load of the machines to Newport, Monmouthshire, and we will soon send the bags home empty.—T. Deakin: *Blaenavon, April* 21.

TO THOSE INTERESTED IN THE AMELIORATION OF THE CONDITION OF THE WORKING COLLIER.

Sir,—That coal must be had, whoever suffers and at whatever risk, none will deny; but I ask, is destruction of life and property in the raising of this mineral, a necessary consequence at the present day? In order to prove facts, we should examine principles; and that we may establish the best system for preventing the awful calamities attending imperfect ventilation, it may not be improper to compare those now in use. There is nothing, perhaps, in the history of Britain, so unaccountable as the fact, that thousands of colliers are permitted to live in, and breathe, an explosive atmosphere, inhaling and re-inhaling carburetted hydrogen and other deleterious gases, which they do on the Tyne, Wear, &c., from the first board to the next headway, and so on to the fiftieth of such boards and headways—whilst the air of a mine can be rendered purer and more genial than the open mass which is often impregnated with such epidemics as the plague, cholera, small-pox, &c. The modern architect would scarcely be employed, if he allowed the chimneys of the houses he planned to smoke—then, if gentlemen and tradesmen will not endure the annoyance of a smoky house, surely in this age of scientific inquiry, the state of British collieries deserves especial attention; for if smoke, which is twice the specific gravity of fire-damp, is made to ascend in a given direction, hydrogen, as it naturally seeks the highest point of elevation, requires but a road to travel in; and if the school and the college have, with propriety! been instituted to furnish the brute creation with those who profess the healing art, once left to the village blacksmith, I ask the philanthropist and friend of humanity, to investigate whether the dreadful expenditure of life from explosion, and of the suffering we meet with in our streets, hospitals, and poor-houses, is not now uncalled-for. The only system of ventilation used in Staffordshire, in the year 1808, when I first made my appearance there, was artificial explosion of the gas, by means of the fire-line, contrived about 100 years ago by a poor fireman, who, with his helper, boldly entered into the war of elements, and perished in the execution of his plan, yet leaving it undefeated. The late humane Viscount Dudley and Ward, and the mine masters of the great central coal-field, generously gave up their property to immense damage, rather than allow their men to work as they do now at the Tyne and Wear, in a gaseous atmosphere, lighted by sparks from steel-mills, which scheme was brought before his lordship and the mine masters (by whom it was rejected) by Mr. Barnes, a viewer from the Tyne, in 1800: eight years afterwards, I was recommended to Lord Dudley, to whom, with several mine masters, I proposed my system, which precluded the necessity of explosion—from which, even when executed artificially, the most appalling accidents were constantly occurring, as well as a tremendous sacrifice of property; I stated my invariable rule, that where there is no dislocations of the strata, there can be no confined hydrogen; and, where there is, let the cause be removed, and the effect must cease—they considered the principle was consistent with philosophy, and decided that a trial should be granted, which I undertook in the most explosive and expensive ground in Europe (Lower Netherton), where the coal that was sold for 10s., his lordship said, had cost him 20s.; but when my system was put fairly into effect, and the last blower cut, the mine that required to be exploded at least 20 times per day, ceased to accumulate gas, and explosion, natural and artificial, was done away with for ever under my system, and it is gratifying to know, that after a practice of 40 years, it cannot be charged with failure in a single instance, or the loss of life or limb by explosion. The diluting system, used in the north, where the destruction of life and property is immense (and which is exactly the reverse of mine), I will describe in the words of the late Mr. John Buddle, an eminent viewer from Newcastle-upon-Tyne:—"The only means we are at present acquainted with, for preventing accidents from fire in mines, is a mechanical application of atmospheric air to the removing or sweeping away the inflammable gas generated in the working of collieries, or as it issues from the several fissures which the workings intersect in their progress, and says I use air-pumps, hot cylinders, and water-blast, and find that 700 barrels of air will render harmless from 170 to 230 barrels of inflammable gas." What are we to think, when the head viewer and chairman of the Tyne and Wear Viewer Society, can fall into such a monstrous error as we have the scientific authority of Sir H. Davy to prove, that 13 barrels of air to 1 of gas is an explosive point, whilst Dr. Faraday considers 14 of air to 1 of gas the last stage of explosive admixture. When we remember the opposition that improvement and invention have constantly been doomed to experience, we need not be surprised that prejudice should long have resisted facts; but is it not now time for consumers of fuel in London, and proprietors of mines situate upon the magnificent Tyne, to take this subject into consideration, that the system best calculated to answer the purposes designed—the saving of life and property—should be taken into general use.

Dudley, April 21. James Ryan, F.S.A.

ON THE VENTILATION OF COLLIERIES.

Sir,—By observing the sad events that occur almost daily in our collieries, I think it should be the study of every man of judgment to suggest, through your valuable Journal, methods for better ventilation; and, believing your praiseworthy disposition encourages the same, I beg to suggest my ideas. After some little consideration, I see no plan so feasible, as that a coal mine should inhale *pure*, and discharge the *foul*, air—similar to the breathing of the human lungs: to accomplish this, I recommend a steam-engine to be erected on a certain shaft, and two cylinders fixed, and constructed with clacks, just as at a blast-furnace, with a column of pipes to each, that should descend so deep, and extend so far, as necessary—then divide and subdivide, until it reach the most remote places of the works; and, in order to prevent the air from escaping too freely before it comes to the most distant pipes, cocks should be fixed, and attended on by a person for that purpose. The main column should be a tolerable size of iron, and the branches of zinc, or galvanised iron. The power required, and the size of the pipes, I shall leave to your experienced and scientific correspondents; the above is merely an outline—but this, in addition to the present improved air-passages, will certainly prevent an accumulation of the deadly matter in the most *obscure parts*, and plentifully supply every other. The expense of working an engine at the pit's mouth would be trifling—but cost should not be an object of consideration, if an effectual remedy can be procured, to save the thousands daily exposed, to the melancholy fate of so many who have been swept from among us in a moment, leaving their widows and fatherless children upon the community, and so many more who have been, like brands, plucked from the fire. If that useful article (coal) cannot be obtained at one price, we must give another.—J. Webb: *Newlyn, East, April* 17.

ON THE VENTILATION OF COAL MINES.

Sir,—In some of the late Numbers of your valuable Journal, steam has been recommended as an auxiliary in ventilating coal mines. I have good reason to fear, that the most strenuous advocates for this system of ventilation, have never submitted it to a practical test; and, as a proof of my assertion, I will mention a case in point. At a colliery in this district, with which I was connected several years, it was found necessary to erect a pumping-engine of 80-horse power; at a few yards distant from the end of the engine-house, next to which the cylinder stood, was situate the upcast shaft, of 6 ft. diameter, lined with bricks to the stone-head, and was carried above the surface of the ground, of the same diameter, by a brick wall. With a view to save the expense of about 30 ft. of 10-in. exhaust pipes, it was deemed advisable to try the experiment of conducting the exhausted steam, in a horizontal drift, into the upcast shaft; we naturally expected that it would, by its superior gravity, not only quickly ascend to the top of the upcast tube, but would also tend to increase the motion of the ascending current of air in the upcast, but in this we were much disappointed. The boilers were pressed to about 30 lbs., and the engine made about 10 strokes per minute. A few days were sufficient to satisfy us, that, instead of the steam rarefying the air, and thus increasing the draught in the upcast shaft, it had a contrary effect. It was found, that, notwithstanding the furnace at the bottom of the shaft, much of the steam was actually condensed in it, and, cooling the side of the shaft, tended rather to impede, than accelerate, the ventilating current. From this fact, I am of opinion, that steam, used simply in the form of a jet, as an auxiliary in ventilating coal mines, cannot be used to advantage—but, however, I am impressed with the idea, that it may be used beneficially, if em

ployed in heating an extensive surface of double-cased metal tubbing, placed in the upcast shaft; or, by heating a number of vertical tubes, somewhat similar to those of a locomotive engine-boiler, but of larger diameter, so connected, that the ventilating current might pass through the spaces between, and become rarefied in its ascent through them. This would prevent any danger arising from the fire-damp exploding at the furnace, when placed at the bottom of the shaft. There can be little doubt but, in situations where the ventilating current is allowed to pass directly from the air-courses, over and through the fire of the furnace, that the gas may explode at that place, and pass from thence into the workings, and cause much damage and loss of life. It is to this cause I attribute the explosion of fire-damp, which took place a short time since, in one of the Marquis of Londonderry's collieries, *on a Sunday*, by which 17 horses were killed, and, if I mistake not, the furnace-man was also killed. Considerable difference of opinion exists, as to whether the furnace should be placed at the top or bottom of the upcast shaft. I consider, that, in a shaft of from 20 to 60 fms. depth, the furnace may be most advantageously placed at the top; because, by being thus placed, at no great distance from the air-courses in the pit, its rarefying effects may be sufficiently felt—but, in deep pits, I consider indispensable, for efficient ventilation, to have two furnaces—one at the bottom, and another at the top of the upcast shaft. The furnace, at the bottom of the shaft, no doubt, accelerates the speed of the ventilating current—but in its passage from thence, to the top of that shaft, often meets with obstacles, sufficient to check, and materially weaken, it—the most formidable of which is water. It is well known, that it is nearly impossible, at any moderate expense, to keep a pit shaft water-tight; this element is so insidious in its operations, that if you succeed in stemming it behind a brick or stone lining in the shaft, it then makes its way through numerous partings in the adjoining strata, which otherwise may require no lining. It will ooze through the joints of plank tubbing, and, I believe, metal tubbing is the only means that can effectually stop it. The water, thus trickling down the sides of the upcast shaft, reduces the temperature of the air, and, no doubt, checks its speed; and before it can reach the surface, its temperature is, perhaps, little higher than the air at that place—but a furnace, placed at the top of the upcast shaft, would materially lessen, if not altogether remove, the evil, by again rarefying it at that point, and thus maintain the necessary speed in the ventilating current. Nor is this the only advantage to be derived from having a furnace at the top of the upcast; in some cases of explosion of fire-damp, where the furnace was placed at the bottom of the shaft only, I have known a day or two to elapse, before a sufficient current of air could be got to traverse the workings, so as to remove the after-damp, or to enable any one either to assist the sufferers, or to explore, to ascertain the extent of the damage. If a furnace had been placed at the top of the upcast in those cases, I am persuaded that the ventilation might have been more readily restored, and, perhaps, some valuable lives saved. In all cases of explosion of fire-damp, and where there is a great accumulation of choke, or after-damp, with the the furnace at the bottom of the shaft, much time must necessarily be lost—because it too often happens, that the furnace-man cannot reach the furnace by going through the workings, nor dare he descend the upcast shaft. No likely means should be left untried, which are at all calculated to neutralise the baneful effects of the choke, or after-damp, as it is well known to be the chief cause of death in cases of explosion—fire-damp may have slain its fifties, but choke-damp has slain its hundreds. W. STOREY.

Bensham, Gateshead, April 19.

ON THE VENTILATION OF COLLIERIES.

SIR,—On perusing your paper of last week I observe, that upon the 13th inst., the multifarious discussions of the Institution of Civil Engineers, upon mining ventilation, were concluded, and a report drawn up to the following effect:—"*That the interference of Government was strongly insisted upon, and as decidedly objected to, by those miners, whom, by experience and good judgment, entitled their opinions to deference and consideration. It was shown, that foreign mines, which were under the constant superintendence of Government engineers, far from being exempt from accident, were not only more liable to the effects of deficient ventilation, but the actual loss of human life was greater than in England; and that if our mines were subject to the same annoying trammels, the price of fuel must be unduly raised, without any corresponding advantage, or immunity from danger.*" But a notion was entertained by the meeting, "*That an association of coalowners might be formed, whereby the state of the mines might be inspected and reported upon, so as to compare the practices of the different districts, with a view of introducing improved measures, consistent with peculiar circumstances. There were obvious reasons why such a power should never be tamely placed in the hands of any Government officers, with the examples of the utter uselessness of the various commissions that had from time to time been appointed.*"

Seeing, then, that the subject has now reached a degree of importance, sufficient to occupy the learned body for so many successive meetings, and as the conclusion to which they have come may be calculated to carry with it considerable influence, I beg permission to offer a few remarks upon the report. They ground their decision against legislative interference, chiefly upon the fact, that in the foreign mines, which are all under the surveillance of Government inspectors, accidents are just as frequent, or more so, than in England; that if the English mines were trammelled with Government officers, that the produce would necessarily be enhanced in price, without any corresponding advantage; and, in proof that no good has yet arisen in this country from the various commissions, which have from time to time been appointed, the report, emanating from one of the most practical and enlightened associations in the kingdom, after successive debates, we may infer to have embodied the most powerful arguments against legislation that can be produced; therefore, I flatter myself, that some interest may be attached to the examination of the grounds of such resolutions.

First, with respect to the state of the foreign mines: I have only had the opportunity of seeing some of those in Belgium, and which are said to be conducted upon a very similar principle to those in France and Prussia, all of which are overlooked by Government engineers. I am free to confess, that, both in point of ventilation, and other arrangements, these mining operations are greatly inferior to the best systems practised in this country—but I apprehend that it is only of late years that these Government regulations have been enacted. I attribute the ill state of the mining upon the continent to arise from the circumstance, that these Government engineers are not grounded in the practical conducting of mines, in such manner as are the north country viewers, where well educated young men are made to serve apprenticeships of four or five years, by habitually descending the mines, and becoming personally acquainted with every part of the process—a practice which scarcely prevails elsewhere, even in this country. An important part of the duty of the foreign engineer, is to collect the various statistics of produce, as well as to record the nature and extent of the accidents—the returns of which go to show, thot those arising from explosions of gas, form but a small portion of the aggregate, and it does but prove how needful it is to guard against such minor casualties in our own mines. The number of accidents from the year 1824 to 1840 inclusive, throughout the mining districts of Belgium, the number of workmen varying from 20,000 to 30,000, were as follows:—

	Killed.	Wounded.
In shafts, by accidents from ropes, or chains	261	50
Ladders	72	30
Other circumstances	232	53
Fall of stones	334	114
Fire burns	505	472
Water	168	16
Explosions by gunpowder	81	79
Divers causes	106	68
Total	1710	882

We have no means of ascertaining what would have been the result, had no interference on the part of Government taken place—but we cannot doubt that it would have been much more serious, since the mines have recently been let upon the condition, that they are to be conducted to the satisfaction of the Government inspectors.

The violent deaths which occurred in 55 mining districts of England and Wales, in the year 1838, were as follows:—By falling down shafts, 63; breaking of ropes, 1; ascending and descending, 10; drowned, 22; falling of stones and coals, 97; various injuries, 43; explosions of gas, 88; explosions of gunpowder, 4; trams and waggons, 21 = 349—showing, that death by explosions only amount to one-fourth of the whole, and that amendment is required in other departments, as well as in ventilation.

Secondly, it is alleged by the report, that any such arrangement as that under discussion, would require an increased price to be put upon the produce, thereby inferring that additional cost would be the result of Government interference. To this proposition I beg leave to dissent—for I think it cannot be denied, that the interference of enlightened, practical men, would be the means of diffusing the best principles of mining; and the more improved the principles, the cheaper the produce. To deny this, would be to negative the very bases upon which is built the very Institution of Civil Engineers; for it is clear, that where the largest capitals, and the most extensive works are carried on, the art of production has reached the highest state of perfection; at the same time, it becomes matter of discretion, as to what portions, of any given system, it would be wise to transplant into other localities, under Government legislation. As exceptions to the general rule, certain changes may perchance be imperatively called for, which would entail considerable expense—but I do not think that circumstance, under proper tribunals of appeal, ought to form a ground for objection in this, more than upon any other subject.

Lastly, it is alleged, that no useful result has ever yet arisen out of the various Government commission, which have from time to time been appointed. In this allegation I cannot but acquiesce; for, notwithstanding the undoubted talent and great acquirements possessed by all the gentlemen employed upon these occasions by the Government, it is clear that none of them were practically acquainted with the mode of conducting a coal mine; and, therefore, it is not at all wonderful, that they should either have failed to discover what was wrong, or that they were enabled so to master the subject, as to devise any better mode of operations than those which prevailed at the works which they inspected; and they might as easily have failed in producing a satisfactory report upon a question arising out of a land or sea fight, or any other complicated business, with which they were practically unacquainted; at the same time, the reports of these learned persons, who have successively inquired into the explosions of Haswell, Jarrow, Risca, Oldbury, and Yorkshire, are in the hands of the Government, and several of them have not only recommended legislation, but have detailed their opinion as to the clauses proper to enact; and it is further said, that this present Government has promised to lay a bill before Parliament, which, in all probability, would have happened ere this, had not the unexampled pressure of public business absorbed their attention. The meeting was of opinion, that a voluntary association of coalowners, would, by inspecting and reporting, so interchange the condition of each respective district, as to introduce and transplant improvements.

This I believe to be highly improbable—in the first place, professional persons (who alone could investigate the subject) will not bestow their time for any such object without remuneration, and coal proprietors will not contribute any such funds. Each person conceives himself an adequate judge of what is most applicable to his own case—therefore, would think it but a humiliation to expend his time in looking after systems, in his opinion, inapplicable. It is found exceedingly difficult in practice to effect changes, even where full and perfect power is given—but much more so, where a controversy is to be upheld amongst persons, each of whom assumes an equal knowledge. In the very last week's Number of the *Mining Journal*, there is a case in point exemplified, in a letter from a Mr. H. Johnson, of Dudley, in controversion of the practice of Mr. Gibbons, as set forth in his late book, upon the *Ventilation of Collieries*, which controversy has arisen out of a recent explosion at his Yew-Tree Colliery, the workings of which are only extended 150 yards from the pit bottom. By this explosion lives were lost, and a verdict of the coroner's jury has consigned the doggie, or manager, to gaol, upon the charge of manslaughter.

Mr. Gibbons's principle of ventilation is by a stack, or chimney, 90 ft. high, in area 25 ft., sub-divided in the centre—thus forming two upcast chimneys of 12½ ft. area each, with ventilating furnaces. The two downcast coal shafts are each 7 ft. diameter; but, by the side of *each* shaft, a groove is formed, having an area of 4 ft., connecting at top with the said air-chimney. The gate-road to the workings is formed at the bottom of the 30 ft. seam, and the air-head at the top—which air-head, 7 ft. area, is communicated with the gate-road below at every six yards, so constituting each return air-course. Beyond the inmost holing, and until a new one was made, the ventilation was forced by means of a 9-in. pipe; and it is in this department of the work that the gas is said to have accumulated which produced the mischief.

Now, assuming the above statement to be correct, no practical person will hesitate to declare that the system is bad in principle, and incapable of ensuring safety. First, we have a downcast shaft, 7 ft. diameter, and 38 ft. area—the gate-road, I suppose, similar; then the air-head, 7 ft., the groove, or trumpet, 4 ft., and the upcast shaft, 12½ ft. By this disproportionate arrangement, good ventilation is impossible—in fact, the whole powers of ventilation are restricted to the groove area of 4 ft.; for it matters not how large are the downcast and upcast shafts, if the intermediate communications are deficient. In the well-regulated collieries in the north of England, for the working of seams not exceeding 5 ft. thick, the chief air-course is required to be 25 to 30 ft. area—whereas, to work the seam of 30 ft. thick, the whole power of the ventilation is to depend upon an air-way of only 4 ft.; and this, too, where the thickness of the seam renders the providing of height entirely inexcusable. Now, this gentleman, an experienced and scientific coalowner, has just written a book in praise of this system; and will any one be bold enough to assert, that he will concede that he has committed an error, notwithstanding each downcast area is nine times that of the groove forming the upcast, and five times that of the air-head? It is but a short time since I was called to view a deep colliery in Cheshire, in which explosions were constantly occurring; and, upon investigating the state of the general ventilation, I found that a 10-ft., and two 6-ft. shafts, were downcasts, and the only upcast for all the workings, including the smoke from an underground engine, was a 4-ft. shaft—the proportion of downcast being, in round numbers, five times that of the upcast; the arrangement of which rendered good ventilation absolutely impossible—but, upon changing one of the 6-ft. shafts into an upcast, the proportions were rendered two to one, which gave immediate and general relief.

Many such incongruities exist in various parts of the country, producing obvious sacrifice of human life; and it is in correcting such general principles as these, that the interference of Government agents would be useful, either in instructing the ignorant, or of enforcing upon the obstinate measures consistent with philosophic principle and practical knowledge; of course, much of the benefit, or mischief, of the measure would depend upon the discretion of the individuals selected.

In conclusion, therefore, I submit that Government engineers, if properly selected, would be the means of introducing general principles of safety—would be a most salutary check upon rash, ignorant, or obstinate measures—would be a great boon to the working miner—and would be the means of amassing very important and very valuable information for the use of Government, in the want of which we are manifestly greatly inferior to the Governments of the continent. What we require is prevention; and I agree so far with the report, that casual examinations after each calamity, by persons, however scientific, are now shown to be useless, unless they have laid the foundation for legislation; and since the Government have already evinced their opinion, that something ought to be done, it is to be hoped that some talented and philanthropic Member of the House will submit the subject to the consideration of Parliament.

Newcastle-on-Tyne, April 21. D.

BIRAM'S PADDLE-FLOAT—STEAM-BOILER EXPLOSIONS.

SIR,—I have read with much pleasure the very ingenious method of connecting the engines with the angular shafts, described in your last Number, by Mr. B. Biram, who seems to have taken a great interest in the propulsion of vessels. I am sorry I cannot ascertain the exact shape of Mr. Perkin's floats; but should imagine they are as Mr. B. has described them. Mr. Biram would be conferring a great favour on myself, and, doubtless, on your numerous readers, if he would forward to your valuable Journal any information—of which, no doubt, he possesses an ample fund—on the subjects of propelling, experimental, or otherwise, as I am convinced much may yet be done to improve our present method. I think all will agree with me on this point, who have travelled by any of the small steamers plying on the Thames, and who cannot have failed to notice the immense tremor caused by the floats striking the water.

"E. G." was much in error if he imagined I had forwarded to your Journal the remarks made by myself on his paper, headed "Steam-Boiler Explosions," as anything original—my only intention being, to show that he was in error, in supposing that an explosion could take place under the circumstances stated by himself—viz.: the boiler going dry. He has imagined that I did not read his communication rightly, or I should have perceived that water *was being pumped into the boiler*. With all due deference to "E. G.," I would ask him, how water could be forced into any boiler, with the accident occurring, which he afterwards proceeds to narrate—viz.: "I found that the engine-man, who was a steady person, had tried the boilers, and found the water low. He put on the feed of water; but it turned out that the capping, or packing, round the plunger of the feed-pump, for filling the boilers with water, had suddenly come off."

I would ask "E. G." what inference could be drawn by me, after reading the foregoing, but the one, *that water was not being pumped into the boiler?* I did not urge any point, in reference to the two valves in the boiler, having written in favour of such application, with many others, prior even to the introduction by the Belgian Government years back of a law, rendering it compulsory on every one in that country, to have two valves to each steam-boiler—one being, as all valves should be, inaccessible to the engine-man. "E. G.'s" remarks, in reference to my knowledge of no steam being generated from a dry boiler, arose from the fact of all boilers (though I admit erroneously) being called dry, when the water has fallen below the flues, or the crown of the tubes; it was that way that I read his paper; and whether I am borne out in my statement, is best answered by the report made by Capt. Pringle and Josiah Parkes, on the causes and means of prevention of steam-boat accidents, to the Committee of Privy Council for Trade in 1839, wherein it was proved, that out of NINETY-TWO accidents to steam-vessels, TWENTY-THREE of that number occurred from explosions of their boilers; and of those TWENTY-THREE explosions, only THREE occurred whilst the vessels were under way, the remaining number taking place generally on the instant of setting the engines in motion.—X. Y. Z.: *Blackwall, April* 22.

MR. MUNTZ'S PATENT SHEATHING METAL.

[Patent dated October 15, 1846; specification enrolled April 15, 1847.]

The patentee states, that the object of his present invention is an improvement in the manufacture of his sheathing metal, for which letters patent were granted to him October 22, 1832, and which consisted in making a sheathing metal for the bottom of ships or vessels, of an alloy of 60 parts of copper and about 40 parts of zinc, whereby the cost of the material has been very greatly diminished. In this alloy the copper was, to a great extent, preserved; although sufficient oxidation was obtained to keep the bottom of the ships or vessels, so sheathed, clean; and separate action on the zinc prevented. Now, by the present invention, Mr. Muntz proposes to diminish the proportion of copper hitherto employed in the alloy, and thereby the cost of the article. For this purpose, he makes the alloy according to the following new proportions:—56 parts of copper; 40¾ parts of zinc; and 3¼ parts of lead.

The alloy is then cast into ingots, rolled into sheets, by preference, at red heat, and annealed; and, if desirable, may be polished in the ordinary manner, by using nitric and sulphuric acid, properly diluted. The patentee remarks, that the lead acts a very important part in this alloy, as, without it, the 56 parts of copper, and 40¾ parts of zinc, would not oxidize sufficiently to keep the bottoms of the ships or vessels clean—nor would separate action on the zinc be prevented; and further, that, instead of lead, any other suitable metal or metals may be used. The patentee further states, that he is well aware that it has already been proposed to mix lead or other metals with copper and zinc, and that he prefers lead, although he does not confine himself thereto, nor to the exact proportions before mentioned; for the proportion of copper may be increased, and, of course, the cost; or it may be diminished, but not to be of any practical utility, below 50 per cent. And he declares what he claims is, the manufacture of a sheathing metal for the bottoms of ships or vessels, which shall contain a less proportion of copper than 60 parts of copper and 40 of zinc, by so using any other metal or metals that oxidation shall be obtained, and the bottoms kept clean, and separate action on the zinc prevented.—*Mech. Mag.*

IMPORTANT DECISION—MIDLAND GREAT WESTERN COMPANY OF IRELAND.

In the case of this Company *v.* Gordon, two important points of railway law were decided, about which, however, there did not precisely exist much doubt. The defendant, Gordon, was an original allottee for 10 shares, and subscribed the deed of the company in 1845. He then sold the shares, but the purchaser having failed to register the scrip, the company registered them in the name of Gordon, and three calls having accrued thereon, they sued him for the amount. The case was tried at the last Liverpool assizes, before Mr. Baron Rolfe, who charged against the defendant, and the jury returned a verdict accordingly.—On Friday last an application was made to the Court of Exchequer, London, for a new trial or a nonsuit, on the ground that the company had no right to register the defendant after he had sold his shares; but the court unanimously repudiated such a doctrine, and decided that the defendant could not, by merely selling his scrip, release himself from his liability; and that when the party to whom he had sold his shares did not offer himself to the company for registration, and, in fact, did not register those shares, the company had a clear right to register the original allottee, and look to him for the calls. It was also contended, that the deed subscribed by the defendant contemplated the making of a railway from Dublin to Athlone, whereas the Act obtained by the company authorised the construction of a line only to Mullingar; and, besides, it embraced the purchase of the Royal Canal, which was a matter foreign to the construction of a railway.

The court, however, ruled the point in favour of the company. They held that "the subscription deed empowered the directors to apply to Parliament to take whatever they could get, and the Act empowered them to make calls on all who had subscribed to the undertaking, and whose names should be entered on the register of the company as shareholders; and, notwithstanding the difference between the projects proposed by the subscription, and those conceded by the Legislature, the whole scheme was identically the same, and the original subscribers were liable as shareholders, and bound to pay the calls made on them by the directors. Rule refused."

Arising out of this case, are other points of some importance. Can an allottee, having sold his scrip, maintain an action against the purchaser, should he refuse to register? If a company accept and register the purchaser, can they, should he become bankrupt, look to the original allottee for payment or calls? We find it stated in a daily journal, that the allottee can maintain his action, and that the company can look to the allottee in the case put—but we should like to have a good opinion before trying either points. The court would, we think, answer both cases in the negative.—*Irish Railway Gazette.*

RAILWAY CALLS.—The total amount of calls on the part of Irish railways, falling due this month, is 242,343*l.* The total amount of English calls is 3,472,564*l.* The total amount of Scotch, 195,000*l.*; and, including 40,000*l.* on the part of the Rouen and Havre Company, the grand total amounts to 3,904,907*l.*

PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES, AND CLOCKS.—E. J. DENT, 82, Strand, and 33, Cockspur-street, watch and clock maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6 gs. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8 gs. to 12 gs. each. DENT'S PATENT DIPLIEDOSCOPE, or meridian instrument, is now ready for delivery. Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

NATIONAL LOAN FUND LIFE ASSURANCE SOCIETY, 26, *CORNHILL, LONDON.*
Capital £500,000.—Empowered by Act of Parliament.
This institution embraces important and substantial advantages with respect to Life Assurances and Deferred Annuities. The assured has, on all occasions, the power to borrow, without expense or forfeiture of the policy, two-thirds of the premiums paid (see table); also the option of selecting benefits, and the conversion of his interests to meet other conveniences or necessity.
Assurances for terms of years are granted on the lowest possible rates.
DIVISION OF PROFITS.
The remarkable success and increasing prosperity of the society has enabled the directors, at the last annual investigation, to declare a fourth bonus, varying from 35 to 85 per cent. on the premiums paid on each policy effected on the profit scale.
EXAMPLES.

Age	Sum.	Prem.	Year.	Bonus added.	Bonus in Cash.	Permanent reduction of Premium.	Assured may Borrow.
60	£1000	£0 3 4	1837	£217 15 1	£109 0 11	£16 0 4	£445 0 0
			1838	192 3 0	87 1 4	13 10 2	395 11 1
			1839	165 11 10	74 1 9	11 3 1	346 2 3
			1840	116 7 6	54 0 10	7 18 10	296 13 4
			1841	111 6 8	49 10 0	7 10 4	247 4 5

The division of profits is annual, and the next will be made in December of the present year. F. FERGUSON CAMROUX, Secretary.

Copy of a Letter from "COLONEL HAWKER" (the well-known author on "GUNS AND SHOOTING")
Longparish House, near Whitchurch, Hants, Oct. 21, 1846.
SIR,—I cannot resist informing you of the extraordinary effect that I have experienced by taking only a few of your LOZENGES. I had a cough, for several weeks, that defied all that had been prescribed for me; and yet I got completely rid of it by taking about half a small box of your Lozenges, which I find are the only ones that relieve the cough without deranging the stomach or digestive organs.—I am, Sir, your humble servant,
To Mr. Keating, &c., 79, St. Paul's Churchyard. P. HAWKER.

KEATING'S COUGH LOZENGES are PATRONISED also by his Majesty the King of Prussia, his Majesty the King of Hanover, and most of the Nobility and Clergy of the United Kingdom, and are especially recommended by the Faculty.
RECENT TESTIMONIAL.
DEAR SIR,—Having been, for a considerable time during the winter, afflicted with a violent cough, particularly at lying down in bed, which continued for several hours incessantly, and after trying many medicines without the slightest effect, I was induced to try your Lozenges; and, by taking about half a box of them, in less than 24 hours, the cough entirely left me, and I have been perfectly free from it ever since.
9, Claremont-terrace, Pentonville, I am, dear Sir, yours, very respectfully,
Feb. 17, 1845. JAMES ELLIS,
Mr. KEATING. (Late proprietor of the Chapter Coffee-house, St. Paul's.)
Prepared and sold in boxes, 1s. 1½d., and tins, 2s. 9d., 4s. 6d., and 10s. 6d. each, by T. Keating, chemist, &c., No. 79, St. Paul's Churchyard, London; and retail by all druggists and patent medicine venders in the kingdom.
N.B.—To prevent spurious imitations please to observe that the words "KEATING'S COUGH LOZENGES" are engraven on the Government stamp of each box.
NOTICE.—These Lozenges contain no opium, or any preparation of that drug.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—The next MEETING will be HELD at OXFORD, and will commence on WEDNESDAY, the 23d of JUNE, 1847.
JOHN TAYLOR, F.R.S., General Treasurer, 51
2, Duke-street, Adelphi, London.

GEORGIA TIN MINES, divided into 2048 shares, and worked *ON THE COST-BOOK SYSTEM.*
The necessary arrangements having been made for carrying out the operations of the company, all future communications are requested to be addressed to the offices of the company, 21, THROGMORTON-STREET, LONDON, where the specimens and plans with the correspondence, may be seen. 52

BRUNTON'S PATENT ORE-DRESSING FRAME.—These FRAMES, for DRESSING TIN, COPPER, and OTHER MINERALS, having been in use, and given satisfaction, on several mines, during the last two years, the PATENTEE begs to call the attention of all Adventurers and Mine Agents to the great advantages, both as regards economy of labour and the great increase of mineral obtained by their adoption. The following gentlemen can certify as to their utility:—Thos. Bolitho and Sons; F. N. Johnson, Esq.; Capt. Jos. Vivian, Cook's Kitchen Mine; Capt. R. Kersick, St. Ives Consols; Capt. R. Edwards, Wheal Franco; Capt. W. Teague, Wheal Grey; Capt. James Miners, and Capt. Matthew Rogers, Carn Brea Mines. 53

THE PATENT SAFETY FUSE,
FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the SAFEST, CHEAPEST, and most EXPEDITIOUS MODE of effecting this very hazardous operation. From many testimonies to its usefulness with which the manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c.:—"I am very glad to hear that my recommendations have been of any service to you; they have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this.'
Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Camborne, Cornwall. 54

SMITH AND ENGLISH (LATE ANDREW SMITH),
PRINCES-STREET, LEICESTER-SQUARE, LONDON,
ENGINEERS, MACHINISTS, IRON AND BRASS FOUNDERS, &c., 55
PATENTEES and MANUFACTURERS of Improved Steam-engines, Rapid Steam Generators, Railway Wheels, Rails and Chairs, Propellers for Canal and River Navigation,
ROPE-MAKING, FLAX-DRESSING, AND OTHER MACHINERY,
Raising and Lowering Machines, Wharf, Warehouse, and Truck Cranes, Tramway, Traversing and Stationary Purchase Crabs, Tackle, &c.—Also, Steam-engines and Boilers, of various constructions; Bone, Sugar, and Mill Work, and Machinery of every description manufactured and repaired; Saw-mills, Breweries, and Factories attended.
Planing, Boring, Turning, Screw-cutting, &c.

SILVER AND GOLD MINES OF THE NEW WORLD.—No. X.

IX. REPUBLIC OF NEW GRANADA.

The ancient vice-royalty of Granada, which first became the republic of Columbia, and was then divided into three independent states, New Granada, Venezuela, and the Equator,* from the seventeenth century, produced, among the precious metals, almost exclusively gold. It is the soil of the present republic of New Granada which alone has furnished, and continues to furnish, gold to commerce. Up to these recent times, operations were only carried on in the sands of alluvion, which were subjected to washing, according to the elementary method of the gold-dust seekers of our rivers; but at present, and every day more and more, veins are attached, of which a great number has been discovered. There have, besides, been introduced in washing several improvements; and the pebbles, which are very plentiful, are crushed by means of simple contrivances, and with great advantage. The heaps of shells, left by ancient washings, are treated with considerable care.

The principal workings in rock are in the province of Antioquia, where for a long time the alluvions have been worked. The Magdalena and the Cauca, its tributary, powerful rivers of considerable length, which flow from the south to the north, parallel to each other, confine a Cordillera, very steep, in which the veins are numerous, and in which are washed the auriferous sands, not only of the province of Antioquia, but also those more to the south, of Neyva and Popayan. Other veins, situated in the Cordilleras, have been attacked; this Cordillera, a ramification of the preceding, and directed, like it, from the south to the north, is comprised between the Cauca and the Atrato. It is in this part of the country that are situated the mines of La Vega de Supia, called also the mines of Marmato, where the gold is accompanied with silver. The Bas-Choco, a long and nearly flat zone, between the Atrato and the Southern Sea, contains auriferous veins, well known this day; but, to the present time, the efforts of the workers have been confined to the alluvions. Gold is also drawn from the sands of the province of Pamplona.

At the end of the last, and commencement of the present, century, the Mints of Santa Fé de Bogota and of Popayan gave together every year 2,100,000 piastres in gold. M. de Humboldt estimated, for that period, the declared yield at 18,000 marcs, or 4140 kilogrammes of pure gold, and the real yield at 4714 kilogrammes. The extraction then was on the increase. According to information drawn from official sources, for which I am indebted to Colonel Acosta, the average coinage of the two years, 1806 and 1807, for the two Mints together, was 22,363 marks of gold, or 3,041,502 piastres, which leads to the conclusion, after what I have learned of the smuggling of that period, that the production was 3,300,000 piastres, or 4880 kilogrammes. During the struggle for Independence, which in Columbia was long and severe (it was there that the Liberator Bolivar fought), the working of the mines suffered greatly. There is reason to believe, after the estimate of M. Jacob, the declared extraction, from 1st Jan., 1810, to 31st Dec., 1829, was, on an average, 1,678,214 piastres, of which at least 1,600,000 were in gold. This would make, in weight of pure metal, 1911 kilogrammes of silver, and 2366 kilogrammes of gold.

On account of smuggling, then become easier, there must be counted at least 100,000 piastres, or 2443 kilogrammes of silver, and 2,000,000 piastres or 2958 kilogrammes of gold. Since then the production has increased. The two Mints of Bogota and Popayan struck off, in 1843, 1,862,090 piastres in gold, or 2754 kilogrammes; in 1844, 1,696,500 piastres, or 2500 kilogrammes. The average of the two years was 1,779,295 piastres, or 2631 kilogrammes of gold.

But of late years smuggling has been carried on with activity. The external commerce having become easy, the workers profitted thereby to avoid the payment, not only of the duties, but also the troublesome formalities to which they were subjected. It was necessary, even last year, to pay a tax of 19 per 100, and exportation was not permitted until after coinage—so that the miner of Bas-Choco was required to send his gold dust across an almost impassible country to Popayan, from which it would have been returned in pieces of money. Under these circumstances, almost all the gold obtained by the washings in Bas-Choco was sent abroad clandestinely. The Mint of Quito, in the republic of the Equator, in which are fabricated at most 100,000 piastres, obtains its gold from Choco. The gold of neighbouring washings, particularly that of Barbacoas, is sent to that destination. There is also coined at Quito a little silver, which appears to come from Peru. Another part of the gold of New Granada is sent to Jamaica, and from thence to England. The Granadian Government, which is animated by good intentions, and which feels of what importance the gold industry may become for the country, has just adopted liberal dispositions relative to this product, in the working of which private individuals have made intelligent exertions. Exportation of lingots is permitted for the future, on payment of a duty one-half less than is paid on coin. According to a comparison, established between the entry and exportation of merchandise, it may be assumed that the exportation, in coin, in lingots, and in gold dust, represents at present 3,250,000 piastres.

Besides the gold mines that we have named, New Granada possesses others, the working of which dates from the very discovery of the American continent by Christopher Columbus. They are those of the province of Veragua, in the Isthmus of Panama. By special regard for the population of the Isthmus, the Government has accorded a complete immunity in the extraction of gold in that province. There are made in Panama gold articles that are esteemed everywhere. A portion of the gold of the province of Antioquia is also made into ornaments, and that is an item not to be forgotten. The total production of gold in the republic must be put down at 3,350,000 piastres, which are 4954 kilogrammes of pure metal, or 17,064,000 francs. There must also be taken into account the production of about 200,000 piastres of silver, which comes from the mines of the province of Mariquita, worked by an English company, which thus far has not been well recompensed for its efforts. It is the equivalent of 4887 kilogrammes of pure metal, or of 1,086,000 francs. And these are not the only mines of silver that remain to be worked in New Granada.

The production of New Granada, from its origin in 1810, may be calculated at 295,000,000 piastres in gold; and from 1810 to the present day it may be estimated to have produced of the same metal a value of 81,500,000 piastres—making a total to this day of 376,500,000 piastres in gold, representing 556,840 kilogrammes of pure metal, or 1,918,000,000 francs.

As to silver, the production can scarcely be estimated at more than 250,000 kilogrammes, or 55,500,000 francs.

* A part of the territory of the Equator, the province of Quito, belongs to Peru.

[To be continued in next week's Mining Journal.]

TO BOILERMAKERS, IRONFOUNDERS, AND OTHERS.—The directors of the COMMERCIAL GAS-LIGHT AND COKE COMPANY will meet at the works on Wednesday, the 5th of May next, to RECEIVE TENDERS for the ERECTION and CONSTRUCTION of a GASHOLDER, of 80 feet diameter, with the columns, girders, &c.—Plans and specifications may be seen, and particulars obtained, on application to the company's engineer, at the works, between the hours of Ten and Two.
Tenders, sealed and endorsed, "Tender for Gasholder," addressed to the secretary, must be delivered before Twelve o'clock, on the day above mentioned.
The directors do not bind themselves to accept the lowest tender. 56
By order of the board, G. JAQUES, Secretary.
Commercial Gas-Light and Coke Company's Offices,
Ben Jonson's-fields, Stepney, April 21, 1847.

LONDON AND NORTH-WESTERN RAILWAY.
STEAM-ENGINES FOR SALE, BY AUCTION.
On TUESDAY, the 18th of JUNE, at CAMDEN STATION, on the London and North-Western Railway, if not previously disposed of, TWO LOW-PRESSURE STATIONARY ENGINES, 60-horse power each—made by Mandslays. These engines are in good working order, and have duplicate pistons; also five fly and rope-wheels, and a travelling frame; two circular boilers, 30 ft. 6 in. long, 7 ft. 8 in. diameter, with two tubes in each, 2 ft. 8 in. diameter; two marine boilers, 18 ft. long, 7 ft. 6 in. wide, and 8 ft. 9 in. high; 100 feet of 9½-inch steam-pipe, safety-valves, dampers, frames, &c., complete.
Office, Euston Station, April 17, 1847. 57

DUFFRYN LLYNVI AND PORTHCAWL RAILWAY COMPANY.—Notice is hereby given, that a SPECIAL GENERAL MEETING of the proprietors of this company will be HELD at the White Lion Inn, Bristol, on Tuesday, the 18th day of May next, at One o'clock in the afternoon, for the purpose of considering, and, if approved of, sanctioning a Bill (now in Parliament) for the Consolidation of the Duffryn Llynvi and Porthcawl Railway Company with the Llynvi Valley Railway Company; the draft of which Bill will be submitted to the meeting, in compliance with the Standing Orders of the House of Lords. By order, 58
Porthcawl, April 15, 1847. W. S. BRADLEY, Clerk of the Company.

EAST INDIAN RAILWAY COMPANY.—Notice is hereby given, that the DEED OF SETTLEMENT of the East Indian Railway Company LIES FOR SIGNATURE at the OFFICES, 8, Broad-street-buildings; and the proprietors of scrip receipts, numbered from 1 to 80,000, are hereby required to transmit the same to the secretary for registration, on or before Saturday, the 1st day of May next—in default whereof the shares will be subject to forfeiture. 59
Copies of the report, with printed forms to accompany the scrip, may be obtained on application at the offices of the company, 8, Broad-street-buildings; Messrs. Carden and Whitehead, Royal Exchange-buildings; and Messrs. Laurence, Cazenove, and Pearce, Barthol mew-lane.
N.B.—The registered share certificates will be issued in the order in which the deed is executed, and the priority regulated by the date of execution.—So soon as arrangements will admit, a notice will be issued, calling on holders of new scrip to present the same for registration.

CALEDONIAN RAILWAY—LOANS ON DEBENTURES.—The CALEDONIAN RAILWAY COMPANY are prepared to RECEIVE TENDERS of LOANS on DEBENTURES, in sums of not less than £500, for three or five years, bearing interest at the rate of 5 per cent. per annum, payable half-yearly, in Edinburgh, Glasgow, London, Liverpool, Manchester, or Bristol. 60
Tenders to be addressed to this office.—Parties may also communicate personally with Messrs. Foster and Braithwaite, 68, Old Broad-street, London.
By order of the directors, D. RANKINE, Treasurer.
Caledonian Railway Office, 122, Princes-street, Edinburgh, March 26, 1847.

CALEDONIAN RAILWAY.—Notice is hereby given, that an EXTRAORDINARY GENERAL MEETING of the shareholders of the CALEDONIAN RAILWAY COMPANY will be HELD within the Royal Hotel, Edinburgh, on Monday, the 26th day of April next, at One o'clock afternoon, for the purpose of considering, and, if thought expedient, of sanctioning—
First,—An agreement for a lease, or guarantee, of the Dundee and Perth Railway, and its branches, by this company. 61
Second.—An agreement for a lease, or purchase, of the Wilsontown, Morningside, and Coltness Railway, by this company.
Third,—And also of authorising the raising of a further sum of money on mortgage or bond, under the powers of the "Caledonian, Pelloc, and Govan, and Clydesdale Junction Railways Amalgamation Act, 1846."
And, for the further purpose of considering, and, if approved of, sanctioning, the following Bills, now before Parliament—the drafts of which will be submitted to the meeting, in compliance with the Standing Orders of the House of Lords—viz.:
(1.)—A Bill, or Bills, to enable the Caledonian Railway Company to extend their station in Edinburgh, and to make branch railways to Granton, to the Edinburgh and Glasgow Railway, to Wilsontown, to Fauldhouse, and to Biggar and Broughton.
(2.)—A Bill to enable the Caledonian Railway Company to extend their railway across the River Clyde, at Glasgow, and to form a station in that city.
(3.)—A Bill to enable the Caledonian Railway Company to make a branch railway from the Glasgow, Garnkirk, and Coatbridge Railway to Glasgow, and to enlarge the station in that city.
(4.)—A Bill to enable the Caledonian Railway Company to make certain branch railways in the counties of Dumfries and Cumberland.
(5.)—A Bill to enable the Caledonian Railway Company to make an extension of the Motherwell Branch of the Clydesdale Junction Railway to Auchinheath Mineral Field, with branches therefrom.
(6.)—A Bill to enable the Caledonian Railway Company to make branches from the Clydesdale Junction Railway to the Douglas and Lesmahagow Mineral Fields, and to Strathaven.
(7.)—A Bill to effectuate the sale of the Wishaw and Coltness Railway to the Caledonian Railway Company.
(8.)—A Bill to enable the Caledonian Railway Company to take on lease a portion of the Glasgow, Dumfries, and Carlisle Railway.
(9.)—A Bill to amalgamate the Glasgow, Paisley, and Greenock Railway with the Caledonian Railway, and to authorise the raising of additional money for the said last-mentioned company.
(10.)—A Bill to effectuate a lease of the Glasgow, Barrhead, and Neilston Direct Railway, and the Glasgow Southern Terminal Railway, to the Caledonian Railway Company, and to authorise the said company to raise money for these and other purposes.
By order of the directors, J. J. HOPE JOHNSTONE, Chairman.
Caledonian Railway Office, 122, Princes-street, Edinburgh, March 23, 1847.

IMPORTANT TO ENGINEERS, MANUFACTURERS, RAILWAY AND STEAM-BOAT COMPANIES.
Messrs. W. & C. MATHER beg to call the attention of the ABOVE PARTIES to their IMPROVED PATENT ELASTIC METALLIC PISTONS.
The PRINCIPAL FEATURE and ADVANTAGE of THIS IMPROVEMENT is 62
1. Its great ELASTICITY and SELF-ADJUSTING PROPERTIES, which enable it to yield to any inaccuracy of the cylinder, whether oval or taper, and to move with the least possible friction.
2. Its extreme SIMPLICITY and LIGHTNESS, consisting of only two pieces of metal, having the vertical and lateral pressure in due and proper proportion, independent of each other.
3. It takes the LEAST possible SPACE, and is well adapted for air and water-pumps, as it allows of a larger water way.
Messrs. W. & C. MATHER feel confident that it is the BEST ELASTIC METALLIC PACKING yet known, for the above reasons.
Models may be seen at the Salford Iron-Works, Manchester; at W. Barker's, engineer, Newton-Moor; and also at J. Mather's, engineer, Beaufort-street, Chelsea, London.

FLEXIBLE HOSE-PIPES FOR LOCOMOTIVE ENGINES,
RAILWAY CRANES, FIRE-ENGINES, GAS, &c.
PATENT VULCANISED INDIA-RUBBER HOSE-PIPES AND TUBING OF EVERY DESCRIPTION. 63
These pipes are made to stand hot-water without injury—are very superior to leather pipes, or the common India-rubber pipes; and, as they do not become hard or stiff in the lowest temperatures, or require any application when out of use, are particularly well adapted for fire-engines.
FLEXIBLE TUBING, of every description, for gas, chemical purposes, &c.
VULCANISED INDIA-RUBBER WASHERS, all sizes, for steam and hot-water joints, &c.—Sole manufacturer, JAMES BYNE HANCOCK,
Goswell Mews, Goswell-road, London.

TO ENGINEERS, RAILWAY CONTRACTORS, MINING AGENTS, IRONMASTERS, AND OTHERS REQUIRING FINE GREASE for MACHINERY and AXLES of every description.—JOSEPH PERCIVAL'S IMPROVED ANTI-FRICTION GREASE is—after trials on machinery and axles of every kind where constant friction is kept up—admitted to be the most useful, economical, and best preparation of the kind ever offered to the public. 64
References to scientific and practical men can be given, and testimonials shown of its great excellence.—Samples forwarded on application at the manufactory, Green-street, Wellington-street, Blackfriars-road, London.

IMPORTANT TO RAILWAY COMPANIES. 65
PATENT KAMPTULICON COMPANY, 18, CORNHILL.
This company having completed their new factory, are prepared to supply railway managers and contractors with an elastic material (perfectly non-absorbent) to place between the rails and sleepers, and between the frames and bodies of carriages, to prevent jarring, and, consequently, wear and tear. The elastic planking is strongly recommended to be used for the backs and sides of carriages, to prevent splinters when accidents occur.
By order of the board, F. G. GREVILLE, Secretary.

ELECTRO-MAGNETIC TELEGRAPH—NOTT'S PATENT. 66
PATRONISED by H. R. H. PRINCE ALBERT, the LORDS OF THE ADMIRALTY, &c.
The proprietors of Nott's Patent beg to inform all RAILWAY COMPANIES, that they are ready to TREAT with them for the ERECTION of the TELEGRAPH, on any length of railway, on the most reasonable terms. This instrument, from its simplicity of construction and certainty of action, is, after the most severe test, proved to be the most useful and efficient instrument of the kind ever yet invented, as reported on by Dr. Faraday, Capt. Brandreth, Professor Brande, Dr. Bachhoffner, &c., and, in fact, all the science of the country.
It may be seen in daily operation on the London and North-Western Railway, where it is in practical use, between Bilsworth and Northampton stations; also, at the Telegraph Office, 2, Royal Exchange-buildings, where all particulars may be obtained, and the report seen.

ELECTRIC TELEGRAPHS.—As the INVENTORS and PATENTEES of the ELECTRO-TELEGRAPHIC CONVERSER, the principle of which is far more simple, certain, and perfect than any at present known to the world, we feel justified in asking all BRITISH and FOREIGN RAILWAY COMPANIES, as well as the various FOREIGN GOVERNMENTS requiring these important instruments, to PAUSE before they ADOPT any PARTICULAR TELEGRAPH, until our patent arrangements are complete; when an inspection of OUR TELEGRAPH will convince them of its superiority, being perfectly free from vibration, and not liable to derangement by atmospheric or other influences. BRETT & LITTLE, 67
140, Holborn-bars, London.

ALBERT ADVENTURE—NOW IN WORK, ON THE COST-BOOK PRINCIPLE.
In 1000 shares.—Deposit 5s. per share.
This LEAD and COPPER MINING ADVENTURE is situated in the parish of Gwinear, Cornwall, at about half a mile north-east of Alfred Consols, now a productive and very valuable mine. The extent of ground comprised in the Albert setts measures three-fourths of a mile along the course of the lodes, from the west to the east boundary, and one-third of a mile in breadth, north and south.
This ground has been long well reported of, as containing several lodes. The manager of the Great Wheal Alfred often expressed his opinion that extensive and profitable mining operations would be witnessed here. 68
Some years since a company was formed, and a mine was opened, under the name of "East Wheal Alfred;" an adit was brought into about the centre of the sett, and cross-cuts to considerable extent were driven; several promising lodes and branches were discovered; and it was unanimously agreed on, forthwith, to erect a steam-engine; the requisite shaft was sunk to about 18 fathoms; materials for building the engine-house were brought on the spot; shares were selling at advancing premiums; when, owing to certain disagreements amongst the parties concerned, further proceedings were abruptly stayed.
The operations of the said company, done at considerable expense, may be justly regarded as a valuable bonus to the new adventurers.
An efficient and encouraging inspection of the mine has been obtained; and, preparatory to ascertaining the most eligible position for the erection of an engine it is advised to drive a cross-cut, in order to the inspection of a lode in the south part of the sett, which was partially seen during the former working, and exhibited favourable indications near the surface.
An extract from the report of Capt. W. Paul, manager of the Tincroft and other mines in the neighbourhood, thus states, respecting the lode first cut by East Wheal Alfred adventurers, and thought to be a continuation of Great Alfred lode:—"This lode is two and a half feet wide; I consider it a kindly lode." And of the other lodes he thus reports:—"In the cross-cut north I discovered several branches, strongly mineralised. From one vein of lead I took some good stones, which, I think, contain silver. The north lode is 20 inches wide; contains mundic and lead, and is spotted with copper ore. I have a favourable opinion of this lode, as the branches and lodes to the south contain the same sort of mineral, and, from their inclination, will fall in with it in depth; indeed, the cross-cut, for several fathoms in length, is strongly mineralised, and the ground very cheap to excavate. Had there been no other lodes in the sett but those discovered, I think any company would be justified in erecting an engine of sufficient power to develope their resources."
Already the adit, the shafts, and cross-cuts, have been all cleared; a horse-whim is now erected on the main shaft; four men are set to drive south, to cut the extreme south lode, as advised by Capt. Paul; four others are opening on the lead branch, from which Capt. Paul selected the favourable specimens noticed in his report. Two men are contesuing at about 300 fathoms east of the present workings, where they have discovered some favourable strata, containing promising gossan and quartz.
A correct review of all the circumstances of this adventure, certainly justifies the necessary outlay to prove it thoroughly.
One plain and important fact should be specially regarded—it is this, that the north lodes incline south, and the south lodes north; and, from the west boundary, the direction of the lodes evidently indicates a junction in the eastern part of the sett. The presumption, then, obviously is, that, in depth and in extending east, a junction will be witnessed—the result of which probably will be, a valuable remuneration for the outlay made in the discovery.
£5000 may be required, for the necessary mining operations, effectually to prove the said lodes; but it is no improper suggestion, as matter of legitimate hope, that, ere the outlay of half the said capital be called for, the adventure may be marketable at a valuable premium.
This concern is divided into 1000 shares; the deposit, or first call, 5s. per share; the circumstances of progression will determine the time and amount of the next and future calls.—The plain and safe Cost-book System will be adopted, and the strictest regard to the appropriation of the capital to actual underground operations, will be economically adhered to by the managers.
Applications for shares are to be made to Mr. James Lane, sharebroker, 75, Old Broad-street, London: the Purser, Mr. F. Harvey, Hayle, Cornwall; or the London Secretary, Mr. W. Witcomb, Johnson's Chambers, 167, Fleet-street, London, of whom the prospectus may be obtained.—The prospectus can also be had at the office of the *Mining Journal*, 26, Fleet-street, London.

PERRANZABULOE SILVER-LEAD MINE COMPANY,
(ON THE COST-BOOK SYSTEM),
In 512 shares.
BANKERS—Sir J. W. Lubbock, Bart., and Co., 11, Mansion-house-street.
SECRETARY—Mr. W. H. Smith.
OFFICES—No. 16, WARNFORD-COURT, LONDON.
This mine is situate on the well-known mineral Penhale estate, in the parish of Perranzabuloe, in Cornwall; and, during its last working, has had the advantage of a beneficial outlay of capital, to the extent of at least 18,000*l.*, chiefly in underground works and operations. By means of this outlay, the permanent riches which this mine contains were fully established by the increase of its returns in 1821, from 7 tons per month to 50 tons at the time of its suspension; and which event was ascribable to no other cause than that of unfortunate disputes—branching out of other matters in litigation between the then proprietors of the mine—added to their low price of lead.
At the time the above mine ceased working, it was not contemplated that its suspension would have been of any duration; and, owing to this circumstance, the underground materials and works were left in their perfect state for future re-commencement of operations. To these benefits and advantages, which may be fairly estimated at a saving of 18,000*l.* in capital, for works in a complete state, and of a period of five years in time in performing those operations, the present proprietors have become the lawful successors.
In the formation of the present new company, however, the lessees propose to admit of the accession of co-adventurers on terms of equal participation with themselves in all the foregoing advantages, and to place the mine in the hands and under the management of the said proposed new company, on the most satisfactory and liberal terms.
For this purpose, therefore, it is proposed to divide the mine into 512 shares, and it is calculated that the capital required to set the mine into complete operation, will be about 5000*l.* The lessees consent to accept of 500*l.* for their interest in the same, there being upwards of that amount of property now actually on the mine. The lessees propose taking 100 shares, upon which they will pay equally with the other adventurers. 69
£2 10s. per share, on the transfer of shares, will be required; and calls will be made not exceeding £2 10s. per share, at intervals of not less than three months (of which one month's notice will be given), for carrying out the future operations of the mine.
It is presumed, that as the higher levels are cleared of water, that pitches may be set and ore raised, which will materially assist the adventurers in their operations.
According to the reports of the mining agents, who superintended the operations of the mine to within a short period of its suspension, a more certain and profitable mining adventure could scarcely be selected, as the mine increased in richness in each succeeding deeper level. From these same levels, when again set to work, a profitable return may immediately take place, but in order to resume mining operations on the most scientific, and, at the same time, cheapest principles, the mine should at once be sunk 30 fms. deeper, and levels driven from that depth on the course of the lode, through the rich courses of ore leading down in the bottom of the 60 fm. level, when returns, to the extent of £1500, and upwards, per month, might be relied upon with safety, and at such moderate rate of working costs, as to ensure a clear profit of some £3000 to £9000 per annum for dividends to share proprietors.
It is confidently anticipated by experienced mining agents, well acquainted with this mine, that by sinking the mine 30 fms. deeper, and extending the levels through the rich ores leading down in the bottom of the 60 fm. level, permanent returns of 100 tons per month could be made with facility, exclusive of the probable returns, by extending the deep levels south, on the course of the lode, to communicate with the south and Vugga shafts.
The average produce of the ores is about 72½ per cent. for lead, and 24 ozs. of silver per ton, which, at the present price of pig-lead, would make at a public sale £15 per ton.
The new lease will be for 21 years, from the present period, at the very moderate royalty, or dues, of 1-24th part of produce.
A committee of management will be chosen out of the adventurers at their first general meeting.
Application for shares to be made to the secretary, at the office of the company, 16, Warnford-court, Throgmorton-street, City.—The Prospectus may be had at the *Mining Journal*, 26, Fleet-street.

REPORT OF CAPTAIN WEBB.
According to your request, I beg to hand you all particulars I am in possession of, relative to Wheal Golden (now the Perranzabuloe Silver-Lead Mine)—viz.: The mine ceased to work about 20 years since—therefore, I have not had immediate engagements there. But for the last 10 years I have been connected with miners and others who have a perfect knowledge of it (many of whom I can place confidence in), and they state, that the north part of the mine is sunk to a 60 fm. level, which has yielded immense quantities of silver-lead ore. There is one particular run of ore in the bottom of the 60 fm. level, about 70 fms. long, a very promising lode, continuing northward in the present bottom ends, this being the most productive part.
The former party, who were rather embarrassed, made an attempt to sink immediately in the ore, by discontinuing the engine-shaft, and erecting flat-rods underground; but this operation was never carried into effect, and the price of lead being very low, a suspension took place, without the intention of finally abandoning the mine; as a proof of this, every material (to the extent of hundred of pounds worth) was let to remain in its place, such as 60 fms. of pit-work (I believe 14-inch lifts), and those newly erected flat-rods. Here very many hundreds of tons have been returned, and good ore ground still going down. More ancient workers have taken away much lead ahead, and a little below, the adit in this 200 fms., between the north and south mine; therefore, I consider the present engine-shaft in a good position for the extending of levels north and south.
With a moderate capital, and economy, I do not hesitate in giving my opinion that this mine will make an extensive, permanent, and profitable concern. It has been wondered why some spirited and respectable company has not taken it in hand ere this; but, until the last few years, lead was rather an unsalable commodity, consequently lead mines were not anxiously sought after. J. WEBB.
Newlyn East, May 14, 1846.

ASSAYING AND ANALYSIS.—Mr. MITCHELL begs to inform the MANAGERS, &c., of MINES, SMELTING-WORKS, and MANUFACTORIES, that he still continues to CONDUCT ASSAYS and ANALYSES of all PRODUCTS, metallurgical and manufacturing, at his LABORATORY, 70
23, *HAWLEY-ROAD, KENTISH TOWN, LONDON,*
to which address communications are to be forwarded.—Instruction in all branches of assaying and analysis as usual.

TO ENGINEERS, BOILER-MAKERS, AND OTHERS.—
LAP-WELDED IRON TUBES, FOR STEAM-BOILERS.
W. H. RICHARDSON, JUN., & CO., DARLASTON, 71
STAFFORDSHIRE,
MANUFACTURE all DESCRIPTIONS of WELDED WROUGHT-IRON TUBES, for STEAM, GAS, &c., of any required length and diameter, on the new and unequalled principle of Mr. J. Rose's recent invention (patented August, 1846).—Address as above.

London:—Printed and Published, weekly, by HENRY ENGLISH, at the Office, No. 26, FLEET-STREET, in the city of London, where all Communications and *Advertisements* are requested to be forwarded—addressed to "the Editor"—post-paid. *April* 24, 1847.

*** It will at all times save much delay and inconvenience, if communications are directed simply
TO THE EDITOR,
Mining Journal Office,
26, FLEET-STREET, LONDON.
And POST-OFFICE ORDERS, &c., must be made payable to WILLIAM SALMON MAXWELL, as acting for the proprietors.